VOL. 126 NO. 1 JANUARY, 1953

THE AMERICAN School Board Journal

A PERIODICAL OF SCHOOL ADMINISTRATION

Annual School Building Number

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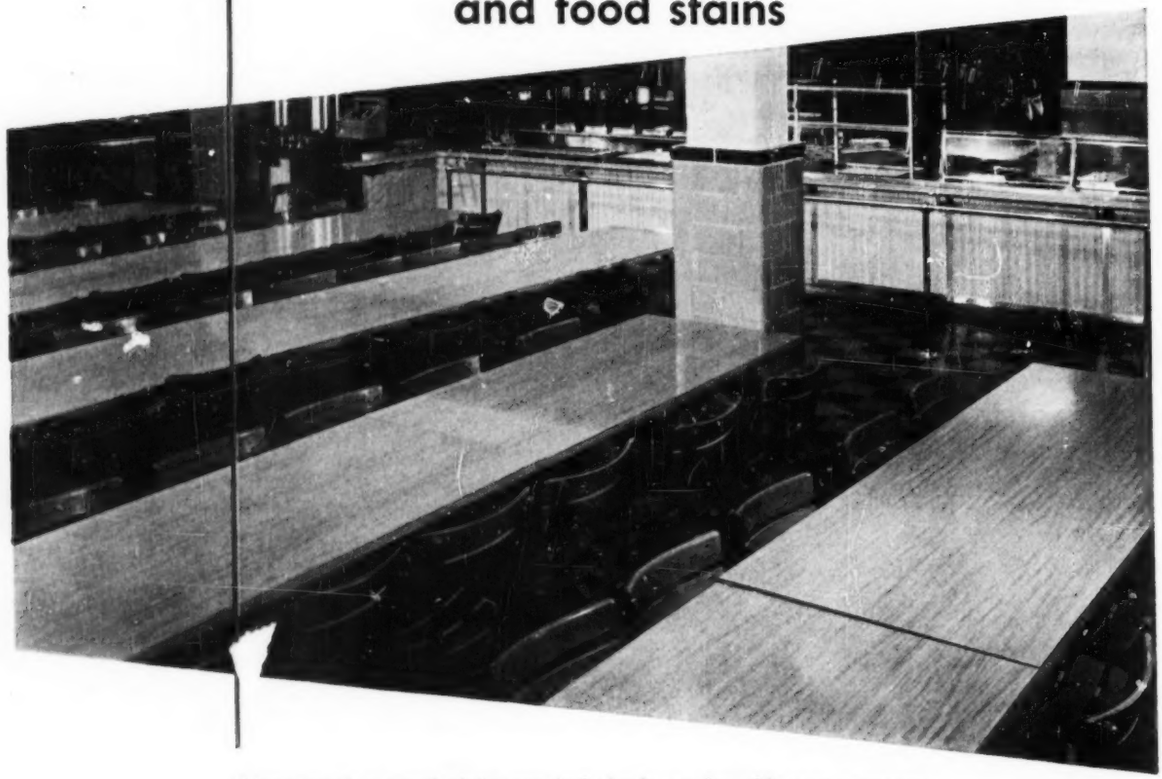

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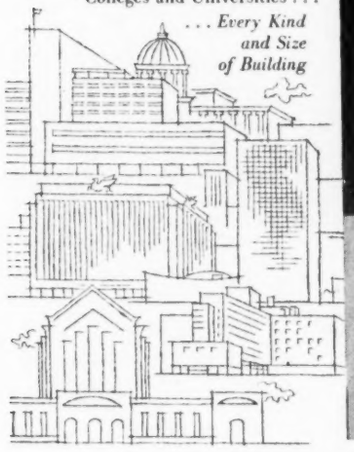

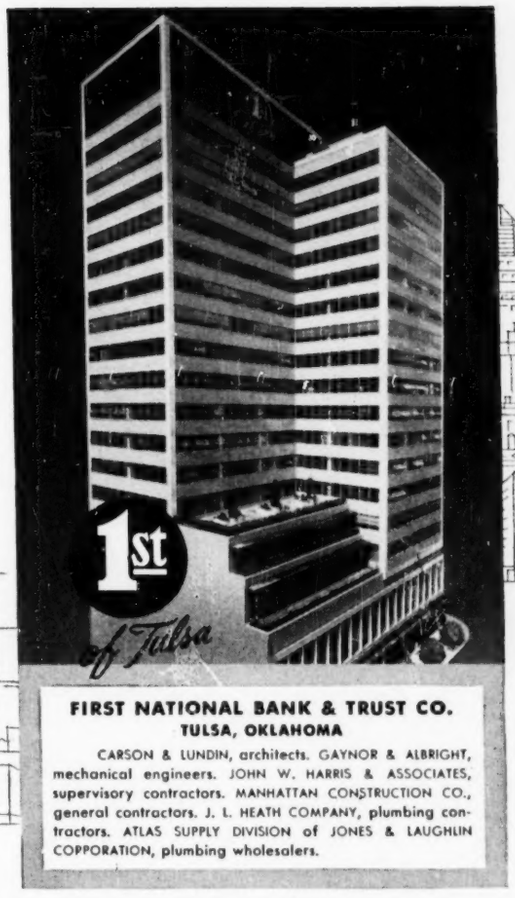

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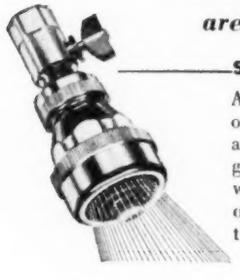

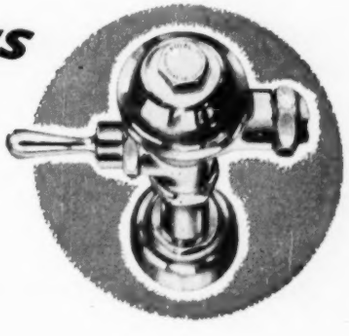

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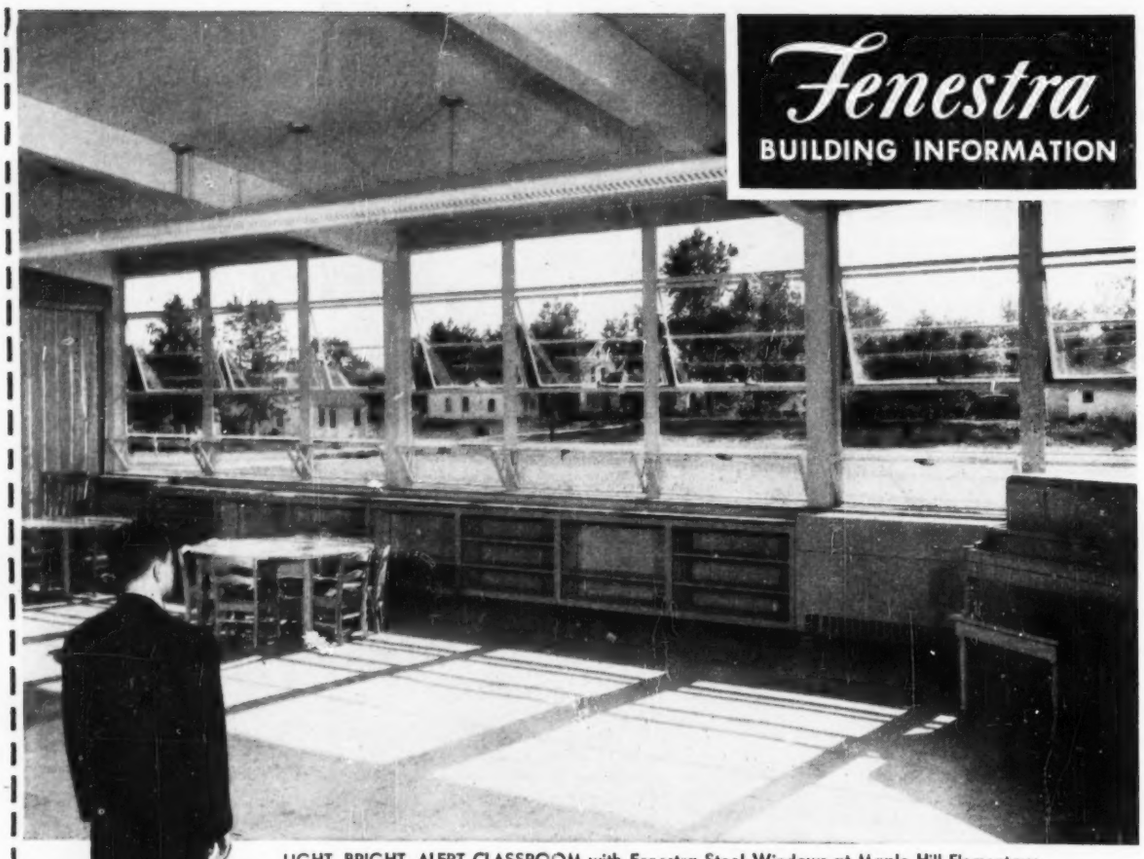

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BUILDING INFORMATION

LIGHT, BRIGHT, ALERT CLASSROOM with Fenestra Steel Windows at Maple Hill Elementary School, Lansing, Mich. Notice how light fills the room. Architect: Laitals & Nuechterlein, Lansing. Contractor: Granger Bros., Lansing.

How can you get more light in a room by shutting a lot of it out?

Most of the school year, you need all the daylight you can bring in.

The only way you can avoid shutting a lot of it out is with clear glass.

And Fenestra* Intermediate Steel Windows are designed to give you *more clear glass area* . . . their frames are especially designed to be strong and rigid without being bulky.

They open up your whole room for an atmosphere of freedom and alertness.

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When you're buying daylight, get your money's worth. Get Fenestra Intermediate Steel Windows —made by America's largest steel window manufacturer. And write for your free copy of Better Classroom Daylighting by Lighting Expert, R. L. Biesele, Jr., and his staff. Detroit Steel Products Company, Dept. AS-1, 2256 East Grand Blvd., Detroit 11, Michigan. *®

For better school environment

Fenestra **STEEL WINDOWS**

VOL. 126 NO. 1

THE AMERICAN School Board Journal

A Periodical of School Administration

January 1953

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CONTENTS

Cover: Street View, Glens Falls High School, Glens Falls, New York

N.S.B.A. Appointees Assist in Organizing the National Council for Accreditation of Teacher Education — Edward M. Tuttle — 5

The Economics of Recent Atomic Energy Developments With Implications for School Building Planning — Sol Levin — 29

Hints on Choosing an Architect for Your School — Josiah H. Child — 31

School Villages — Possible Solution to a National Problem — Charles R. Colbert and Norman Spray — 33

Kalamazoo Builds for Community Service — Dr. Loy Norrix — 37

The South St. Paul Junior High School — Irvin T. Simley — 41

The Glens Falls Story — Helen S. Gahimer — 45

New Hartford Builds a New School — Ralph W. Perry — 51

High School Science Facilities — Theodore W. Munch and Warren J. Pelton — 55

Superintendence by a Clerk-of-the-Works — William Stanley Parker — 57

Classroom Finishes for Visual Comfort — C. J. Allen — 58

Marion Sells School Building Program to Community — L. L. Dickey — 61

Board Acceptance of School Buildings — Stephen F. Roach — 63

Planning and Equipping an Elementary Classroom — H. W. Schmidt — 64

Fresno's Sunshine School for Spastics — 66

Let There Be Light — but — ! — William H. King — 92

EDITORIAL:

Building Schools in 1953 — 68

DEPARTMENTS:

School Board News — 70

School Law — 75

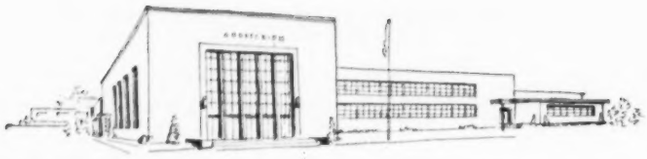
School Finance and Taxation — 78

Personal News — 80

New Publications for School-Business Executives — 83

School Building News — 86

News of Products for the Schools — 98



Phillips High School Auditorium, Phillips, Texas, equipped with 800 full-upholstered Bodiform chairs. Architect: Wm. C. Townes, Amarillo, Texas. Superintendent: Lee Johnson.

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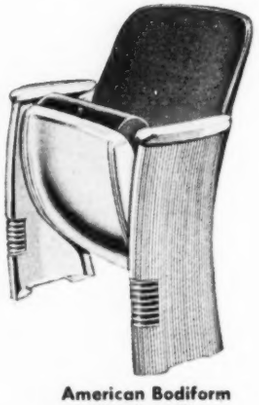

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N.S.B.A. Appointees Assist in Organizing

The National Council for Accreditation of Teacher Education

Edward M. Tuttle

What many leaders believe to be the most important current development in the educational field got off to a strong start, November 14–16. At a meeting in Washington on those dates, 21 official appointees of five co-operating agencies organized the long heralded National Council for Accreditation of Teacher Education, referred to in these columns more than once during recent months as being in prospect.

At this first meeting, members of the Council (1) received background information and suggestions from the temporary committee which had been planning the Council's organization for the past year and a half, (2) elected provisional officers and an executive committee for one-year terms to September 1, 1953, (3) approved the goals and functions proposed for it by the temporary committee, (4) set a target date of July 1, 1954 for the actual taking over by the Council of accrediting operations from the American Association of Colleges for Teacher Education (AACTE), (5) listed the major tasks which the Council faces, (6) adopted a statement of policy regarding operation, and (7) planned certain immediate next steps to be taken.

Membership of the Council

The National Council for Accreditation of Teacher Education is a co-operative undertaking in which the institutions that prepare teachers, the state agencies legally responsible for teacher certification, the local employing agencies (school boards) which represent the lay public, and the teachers themselves at all levels have joined forces. Original appointees will serve three, two, and one year respectively; thereafter one third of the members will be appointed each year for three-year terms.

Members from institutions preparipg teachers have been selected from various types of institutions, and include:

L. D. Haskew, dean, College of Education, The University of Texas (1955)

Henry H. Hill, president, George Peabody College for Teachers, Nashville, Tenn. (1955)

Waldo E. Lessenger, dean, College of Education, Wayne University, Detroit, Mich. (1954)

Charles J. Turck, president, Macalester College, St. Paul, Minn. (1954)

Sister M. Augustine, president, Alverno College, Milwaukee, Wis. (1953)

Herbert D. Welte, president, State Teachers College, New Britain, Conn. (1953)

Members from the legal state agencies include three chief officers:

Roy E. Simpson, State Superintendent of Public Instruction, California (1955)

Hilton C. Buley, State Commissioner of Education, New Hampshire (1954)

Edgar Fuller, executive secretary, National Council of Chief State School Officers, Washington, D. C. (1953)

And three staff officers:

F. Floyd Herr, Director of Certification and College Accreditation, Kansas State Department of Public Instruction (1955)

Harold J. Bowers, Director of Teacher Education and Certification, Ohio State Department of Education (1954)

Ermo H. Scott, Deputy Commissioner of Education, Maine State Department of Education (1953)

Members from the school board group include:

Clyde B. Moore, Professor of Education, Cornell University, and president of the Ithaca (N. Y.) City Board of Education (1955)

Frank H. Trotter, Commissioner of Health and Education and president of the Board of Education, City of Chattanooga, Tenn.; president National School Boards Association (1954)

Edward M. Tuttle, executive secretary, National School Boards Association, Chicago, Ill. (1953)

BESTOWAL

"Be the opener of doors to those who come after you."
— RALPH WALDO EMERSON

By custom, we place special emphasis on the beginning of a calendar year, thinking it an opportunity to improve our ways, to make a fresh start. In reality, each day begins a new year and presents a new opportunity for all who greet its dawn. We may resolve at any time to live more wholesomely, more effectively, more generously among our fellow men. So living, we find happiness when through some act of ours another life is enlarged and enriched. Emerson must have had this in mind when he admonished us to open doors of opportunity to those who follow and, through them, to help the world advance beyond our own accomplishment. "He is the greatest teacher whose pupil most outstrips him." — *E. M. T.*

Members from the teaching profession have been chosen from various levels of the profession, and include:

John L. Bracken, superintendent of schools, Clayton, Mo. (1955)

Herbert P. Lauterbach, high school teacher, Aliquippa, Pa. (1955)

Margaret Perry, elementary teacher, Oregon College of Education, Monmouth (1954)

C. O. Williams, dean of admissions, The Pennsylvania State College (1954)

Gladys Robinson, elementary school teacher, Lancaster, S. C. (1953)

C. O. Wright, executive secretary, Kansas State Teachers Association (1953)

Provisional Organization

The following slate of officers was elected by the Council to serve until September 1, 1953, inasmuch as the temporary committee had fixed the beginning of the Council's first fiscal year as September 1, 1952:

Executive Committee

Chairman, Waldo E. Lessenger
Vice-Chairman, C. O. Williams
Secretary-Treasurer, Edgar Fuller
Members: Harold J. Bowers, Gladys Robinson, Edward M. Tuttle, Herbert D. Welte

It was provided that the executive committee should undertake the formulation of a Constitution and Bylaws without being bound by any of the designations made for the provisional organization.

Goals and Functions

The following proposals recommended by the temporary committee were adopted by the Council:

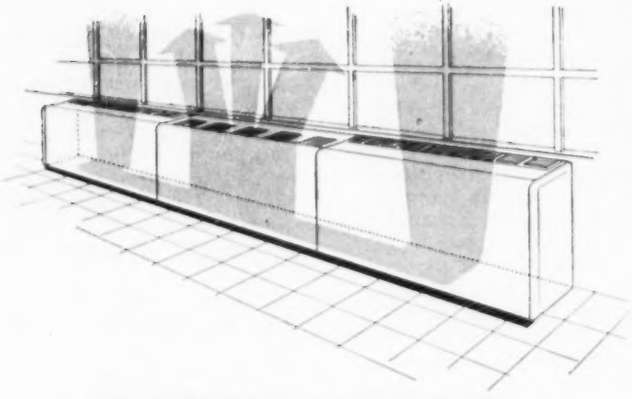
I. Goals to be achieved by the National Council
   A. Recognition of teaching as a major profession
   B. Provision by all institutions preparing personnel for this profession of programs, facilities, and other resources adequate to insure professional competence

II. Functions to be served by the National Council
   A. To formulate standards for teacher preparation through continuous research and through consideration of the recommendations of all organizations concerned with the improve-

(Continued on page 8)

New York's Newest

The smooth low lines of the new Smith Street School with its large glass areas and colorful interiors once again demonstrates the tremendous architectural progress our nation is making in providing our children with ideal conditions for learning.



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In the exclusive DRAFT|STOP System, window downdraft is completely controlled at all times. Provision for constantly trapping cold air downdraft at the windows is offered only in the Herman Nelson DRAFT|STOP System.

The days of The Little Red Schoolhouse where Readin' . . . 'Riting and 'Rithmetic were taught to the tune of a hickory stick . . . have faded even further down the corridors of memory with the opening of the new Smith Street School in East Hempstead, Long Island, N. Y.

Here a far-sighted Architect and a progressive Board of Education have guaranteed generations of children healthier, happier schooldays in an ideal "Classroom Climate" by specifying the finest known school Heating . . . Ventilating . . . and Cooling equipment . . . the Herman Nelson DRAFT|STOP system.

The DRAFT|STOP system . . . as it does in hundreds of other modern schools throughout our country . . . provided the perfect answer to the heating, ventilating and cooling problems faced by the architect and engineers engaged in building this newest New York School.

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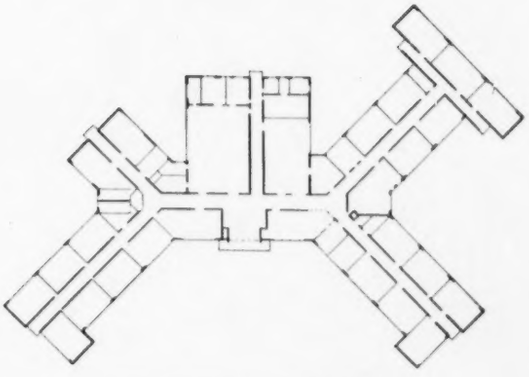
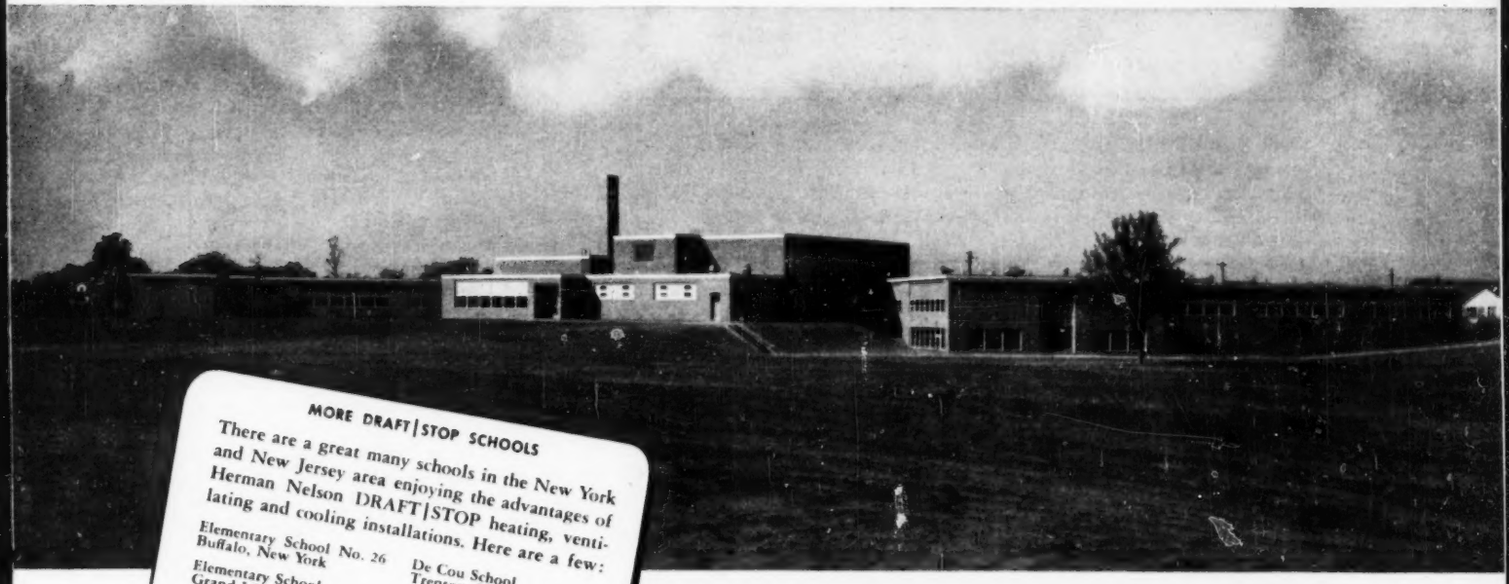
And ONLY the exclusive DRAFT|STOP system offers this perfect heating, ventilating and cooling control.

If you are planning a new school or a school modernization program—it will pay you to choose Herman Nelson DRAFT|STOP—the unit ventilator designed to keep children learning . . . in health and comfort. Please write Dept. AJ-1 Herman Nelson Unit Ventilator Products, American Air Filter Company, Inc., Louisville 8, Kentucky.



Floor plan of the new Smith Street School.



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18th
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Uniondale, Hempstead,
L. I., New York

Amos Harrison School
Livingston, N. J.

Florham Park School
Add'n
Ridgedale Avenue
Madison, N. J.

De Cou School
Trenton, N. J.

Fredon Twp. School
Fredon Twp., N. J.

Milton Avenue School
Chatham, N. J.

Pingry School
Hillside, N. J.

Joseph S. Stokes Memorial
Trenton, N. J.

Hammond Central School
Hammond, New York

Hauppauge School Addn.
Long Island, New York

Jordan H. S. Addition
Jordan, New York

Honeoye Falls
Central School
Honeoye Falls, New York

Smith Street School, East Hempstead, L. I., N. Y. Supervising Principal, Dr. John J. Forester; Architect, Frederic P. Wiedersum; Consulting Engineer, Foster & Cafarelli; Mechanical Contractor, Berwind & Co.

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School authorities, nurses and parents all agree on the desirability of sanitary wash fixtures. Architects, too, have recognized this requirement and as a result a big majority of schools erected during the past 20 years have installed Bradley Washfountains. This wide usage is a result of the superlative sanitary features, their economy of space and water consumption, and their convenience.

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If you are planning new schools, or modernizing present buildings you can easily replace out-of-date fixtures with Bradleys.

BRADLEY WASHFOUNTAIN CO.
2223 West Michigan Street
Milwaukee 1, Wisconsin

Distributed through Plumbing Wholesalers

New Catalog 5204 mailed on request.

N.S.B.A.

(Continued from page 5)

ment of the preparation of teachers

B. To devise ways and means of evaluating institutional programs of teacher education by the application of these standards on the request of an institution or state authority responsible for the accreditation desired by the institution

C. To publish lists of institutions accredited by this Council.

Major Tasks to be Accomplished

In all, the National Council for Accreditation of Teacher Education held eight sessions during its first three-day meeting, and thoroughly discussed the tasks which it faces in seeking to discharge its functions and to accomplish its goals. It adopted a statement listing seven of these tasks, as follows:

1. To weld itself into a cohesive agency dedicated individually and collectively to the effective accomplishment of the long-term purpose for which the Council is designed

2. To establish the case for a voluntary national professional accrediting council for teacher education

3. To understand and utilize all that has proved successful in the accreditation of teacher education as a basis for its own policies and procedures

4. To assume responsibility for the accreditation of teacher education, co-operating with other groups in procedures to accredit

5. To develop policies, standards, and procedures for evaluating institutional programs of teacher education on a continuing basis, emphasizing institutional initiative, freedom for growth, and experimentation, and avoiding static requirements which might tend to eliminate incentives for improvement; and to employ competent personnel to achieve these ends

6. To provide legal agencies responsible for the administration of statutes governing teacher education and certification with an acceptable and adequate basis of professional and public consent for their legal actions

7. To assist in safeguarding the state and local control of public education and the freedom for private provision of education by offering for voluntary use by state, local, and private school authorities dependable measures of quality in the preparation of teachers.

Policies Concerning Operation

Most important action of the beginning Council was the formulation of a basic statement of policies concerning the operation of accrediting both prior to and subsequent to the target date of July 1, 1954. After prolonged discussion, the following policies were unanimously adopted as the foundation principles upon which the work of the Council shall rest:

1. The National Council for Accreditation of Teacher Education will address itself im-

(Continued on page 10)

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This CROSLEY-equipped kitchen serves the students of the Home Economics Department, Washington State College, Pullman, Washington.

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Position_____

School_____

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NOW . . . A spirit duplicating machine especially engineered and designed to handle the hundreds of different school jobs. Built to OLD TOWN's rigid specifications of top quality — for rugged school use — high-speed production.

Here's the finest little duplicator that money can buy — featuring "cyclomatic action" which assures faster, more brilliant reproductions. Produces 1 to 6 colors at one time, in split seconds. Makes over 140 clean, clear copies a minute, of anything you type, write, print or draw — on varying weight paper or card stock; 3" x 5" up to 9" x 14". Clean, fast, easy to handle. Write for illustrated brochure TODAY on the revolutionary new OLD TOWN Model 9S Copymaker.

OLD TOWN'S
Model 9S
COPYMAKER

Has ALL the usual Duplicator features PLUS: —

- **CYCLOMATIC ACTION** — Sealed in bearings and high-tension gears give greater speed, efficiency, economy and a life time of service
- **FLUID CONTROL** — Prevents excess moisture and results in instantaneous drying
- **SINGLETTE** — Patented sheet separator prevents waste and blank sheets
- **WIZARD COPY CONTROL**— Regulates brightness of copies or length of run

School Supply Houses: The many unique and exclusive features of this new OLD TOWN Model 9S Copymaker assure you repeat business. Write TODAY for complete dealer franchise information.

OLD TOWN CORPORATION
750 PACIFIC ST., BROOKLYN 17, N. Y.
Made by the manufacturers of world-renowned
OLD TOWN Carbons, Ribbons, Duplicating Machines & Supplies

N.S.B.A.

(Continued from page 8)

mediately to the task of evolving suitable standards and effective procedures for the voluntary accreditation of programs of teacher education in all colleges and universities. We shall begin this task upon the basis of the present excellent standards of the AACTE, and in further refining those standards will use to the fullest all the resources of those concerned with teacher education. We plan to complete the task of evolving standards and procedures by July 1, 1954. After that date, the National Council for Accreditation of Teacher Education will undertake the task of accrediting professional teacher education programs in colleges and universities.

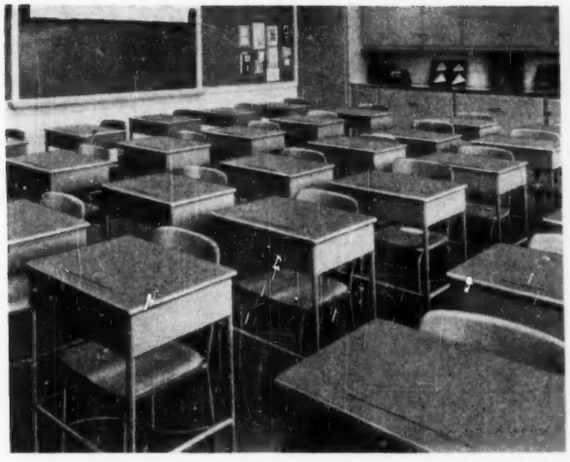
2. Until July 1, 1954, the National Council for Accreditation of Teacher Education requests the American Association of Colleges for Teacher Education to continue its program of accreditation and to continue its efforts to improve that program. The National Council for Accreditation of Teacher Education further offers to the AACTE its full cooperation in extending active participation in accrediting procedures to all agencies concerned with teacher education.

3. The National Council for Accreditation of Teacher Education recognizes that the AACTE has now and will continue to have an important contribution to make as an alliance of colleges and universities devoted to continuous improvement of teacher education. When the accrediting function is taken over by the National Council for Accreditation of Teacher Education, the American Association of Colleges for Teacher Education will be free to expand its discharge of this highly important role and will receive the warm support of the National Council.

4. It shall be the policy of the National Council for Accreditation of Teacher Education to work co-operatively with organizations and agencies interested in the development of various phases of the education of teachers, in order that the accreditation standards and procedures eventually worked out may give adequate recognition to the demands for excellence in the specialized, as well as the general, preparation of teachers. The National Council commends the steps in this direction already taken by the American Association of Colleges for Teacher Education and requests that such policy be continued.

5. The National Council for Accreditation of Teacher Education recognizes the ability and success of regional accrediting associations in accrediting institutions on the basis of general quality. The National Council has no intention of attempting to duplicate the general accrediting services rendered by such regional associations, and proposes to follow closely present AACTE policy in this regard. The National Council will deal with the professional accreditation of programs of teacher education.

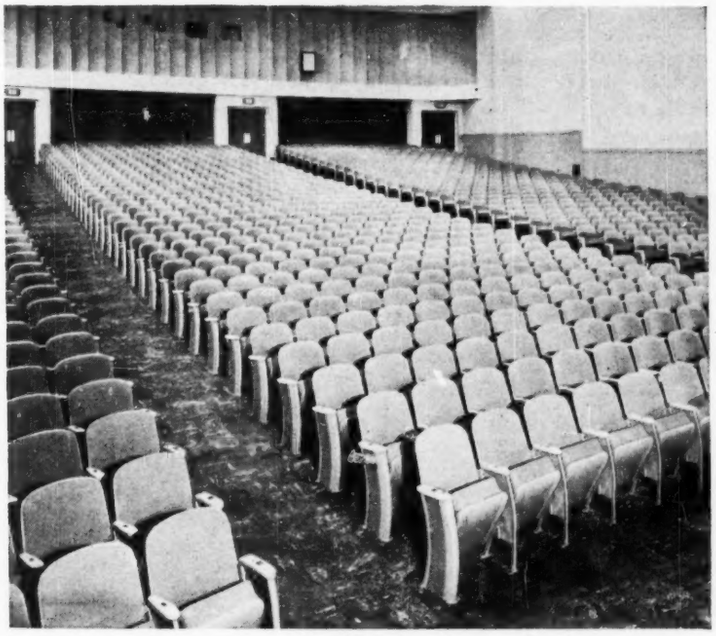
(Concluded on page 96)



CLASSROOMS FURNISHED with Heywood-Wakefield S 1039 Table Desks and S 915 All-Purpose Chairs may be quickly rearranged for the varied activities of a day's schedule. Light weight and simple design give this furniture maximum flexibility.

IN SUPPLEMENTARY CLASSROOMS, Heywood-Wakefield S 819 Tablet Arm Chairs afford greater flexibility with adequate working surface for study or note-taking. The extra heavy welded tubular steel construction assures long service with low maintenance costs.

Milford High School utilizes the **FLEXIBILITY** and **ECONOMY** of Heywood-Wakefield furniture



THE INSTALLATION of nearly 1500 Heywood-Wakefield TC 700 Auditorium Chairs provides an unusually attractive and comfortable assembly hall both for school activities and community gatherings.

Superintendent of Schools Joseph A. Foran and the town of Milford, Connecticut, are justly proud of their new Milford High School. Both the building and its appointments reflect sound judgment in appraising today's needs with an eye toward tomorrow. Plans for the school were drawn by William J. Provost, Architect, Stamford, Connecticut. The installation of Heywood-Wakefield furniture was handled by Gledhill Brothers, Boston, Distributors for the Heywood-Wakefield Company. For further information on Heywood-Wakefield School Furniture, write for your free copy of our new catalogue.

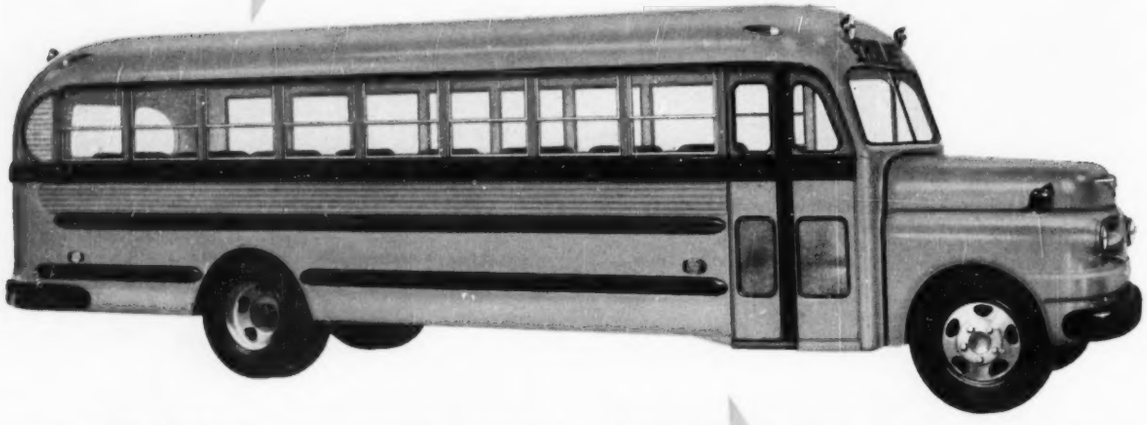
HEYWOOD-WAKEFIELD
EST. 1826

School Furniture Division
MENOMINEE, MICH., AND GARDNER, MASS.

★ **The ORIGINAL Tubular Steel School Furniture** ★

NEW 1953 SUPERIOR PIONEER

presents beautiful Strata-Flo Styling like latest cross-country buses



The 1953 Superior Pioneer is instantly recognized because it is the only school coach that has sleek new Strata-Flo Styling like the most modern cross-country buses . . . the only school coach armored with multi-ribbed Safe-T-Shields that provide extra life-saving protection for your children.

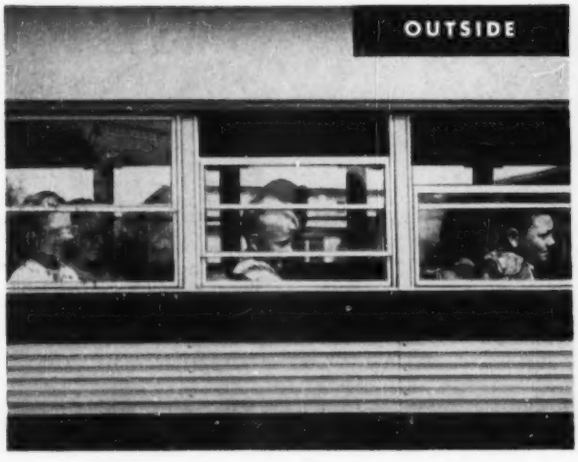
The horizontal ribs in the Safe-T-Shield panels greatly increase beauty of the coach and, more important, they enable the Safe-T-Shields to withstand many times more pressure than ordinary flat steel panels. These Safe-T-Shields run full length of sides, both *inside* and *out*, providing DOUBLE-ARMORED passenger security.

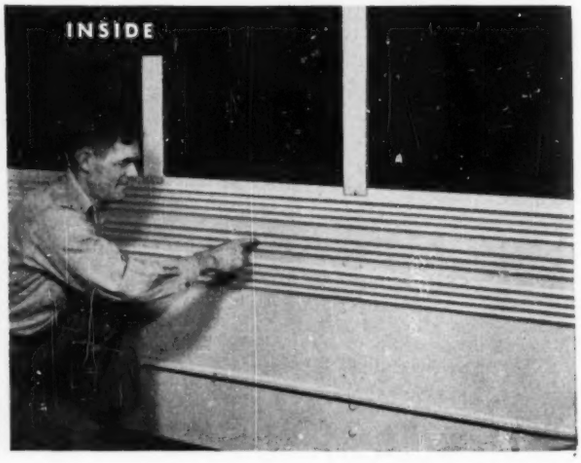
Add to this the stronger-than-ever new Super-Guard Frame . . . the exclusive new Safe-T-Exit Windows that speed emergency escape . . . the new Super-Jet-Flo Heating, Ventilating, and Defrosting . . . the new "comfort-planned" interior with 72-inch headroom . . . plus the many other outstanding features, and you have by far the best school bus buy on the market today.

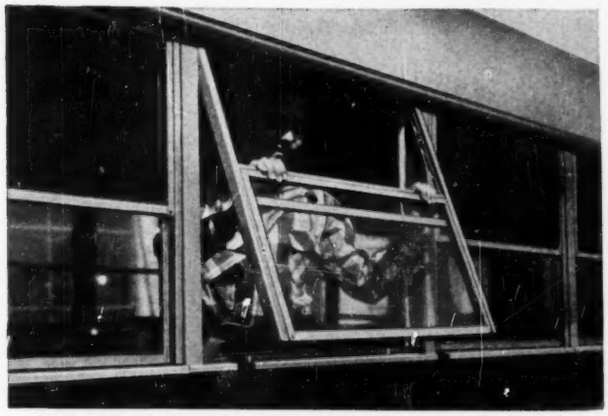
The Pioneer lives up to its name in safety, comfort, durability, and beauty. It's the school coach your children will be proudest to ride in—and it's priced to give you most for your money. Contact your Superior Distributor today.

SUPERIOR COACH CORPORATION, LIMA, OHIO

Ribbed Safe-T-Shields provide greatest strength and beauty







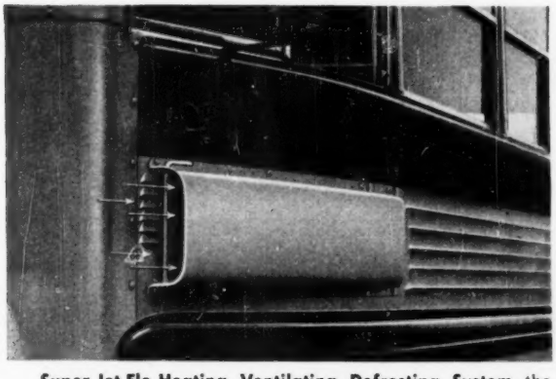
New Safe-T-Exit Windows speed emergency escape. Lower top sash clear down, push out, and whole window swings out. Two such windows (one on each side) are standard.

Massive, box-type, wrap-around bumper is mounted so impact is absorbed by chassis instead of by coach in which children ride.

Extra headroom at rear helps prevent head injury in rear crash, ends "bent-neck" posture. Exceeds legal requirements.

Six-footers can stand erect. No stooping nor bumping of heads on ceiling. Ribbed linoleum in aisle.

Easy-to-reach hand rail helps smaller children get on or off safely.



Super-Jet-Flo Heating, Ventilating, Defrosting System, the most efficient on any school bus, brings abundant fresh air into coach through this fan-powered, jet-type air scoop.

Spacious "comfort-planned" interior has restful, wear-resistant seats and thick shoulder cushions. Completely insulated.

SUPERIOR COACHES

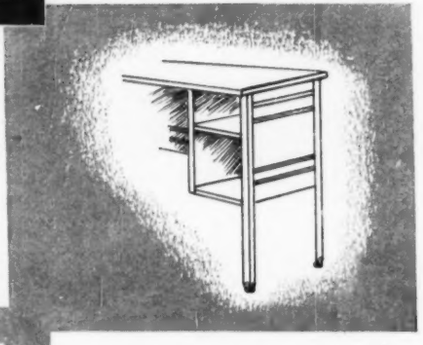
More children ride Superiors than any other school bus because only Superior gives you so much for your money!

One-12 DESK

← The ONE-12 Desk

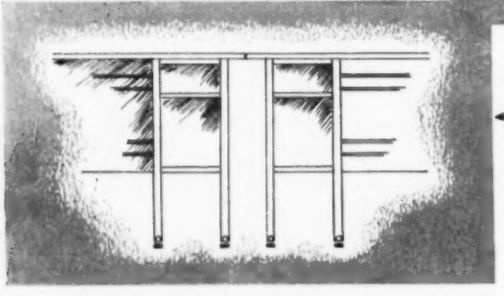
The ONE — 12 DESK, American Desk's most practical, most modern classroom unit — designed in heights for grades ONE through TWELVE. It's the sturdiest of units: spot welded steel and fine, highly finished, multi-ply birch tops measuring 18 by 30 inches. Ask your A-D Dealer to show you a sample desk soon!

✱ Available also with "Fibreresin" plastic tops.



E-ONE-12 →

The ANGLE STEEL version if you prefer this same desk with angle steel legs!



← BOOK SHELVES

Order your ONE-12 desks with the book shelves on either the right or left hand side.

American Desk
MANUFACTURING COMPANY

MANUFACTURERS OF PUBLIC SEATING • • • Temple, Texas

Ronald Chatham photo

Introducing smoke into the schoolroom model to make air flow visible.

VENTILATION GOES TO SCHOOL

Texas Engineering Experiment Station tests show what kinds of windows and window detailing provide the best warm-weather ventilation

IF SCHOOLROOM—or plant—ventilation is a problem that concerns you, here's a report from the pages of "Architectural Forum" we know you'll want to read.

In it, you'll see how sun hoods, window types, and outlet wall openings effect the overall air flow pattern throughout the room . . . how with proper design, schoolrooms can be made comfortable—even in hot weather.

If you missed reading this factual and timely report, we'll be glad to send it to you. For your free copy just fill in and mail the coupon at right.

With special test equipment, velocity of air flow within model is accurately measured.

KIMBLE GLASS COMPANY

Subsidiary of Owens-Illinois Glass Company

Toledo 1, Ohio

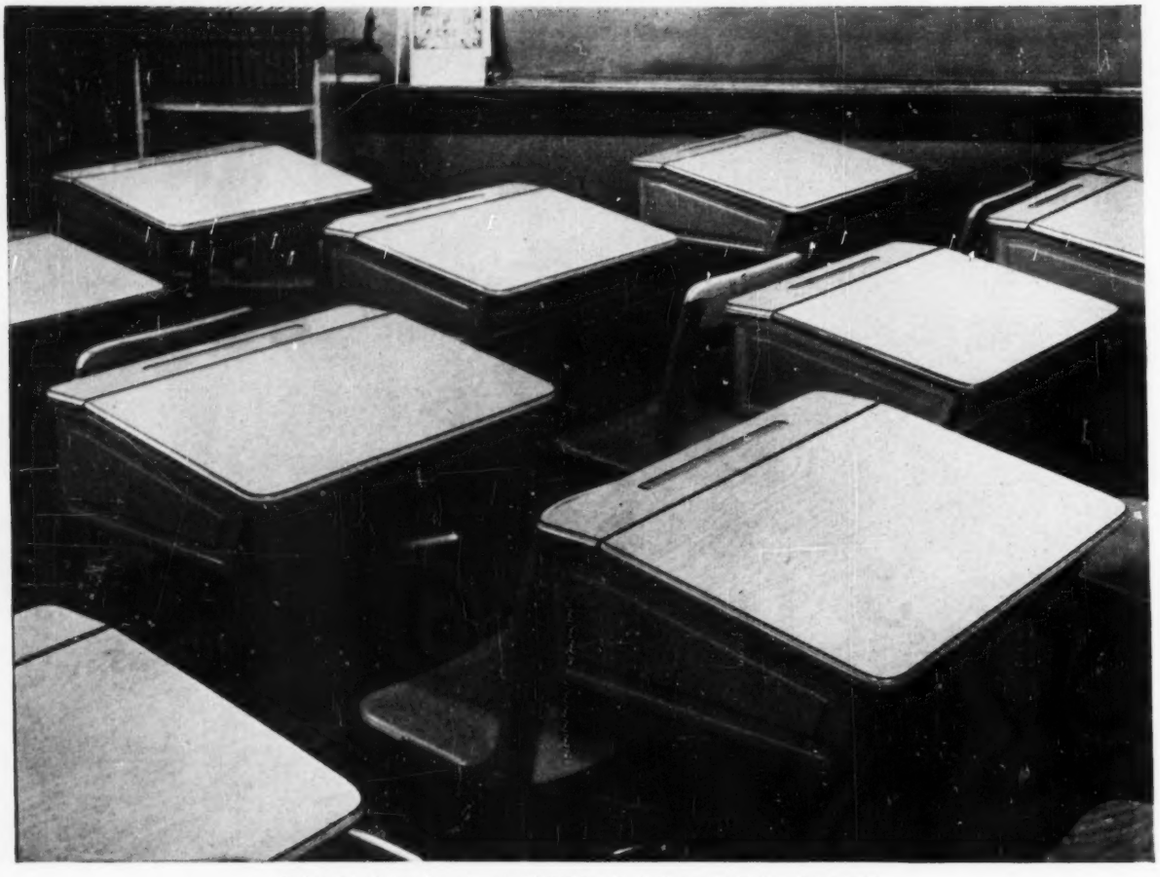
Insulux Glass Block Division
Kimble Glass Company
Dept. AS-1, Box 1035, Toledo 1, Ohio

Send me a copy of the "Forum's" report: "Well-ventilated schoolrooms."

Name_____

Address_____

City_____ Zone_____ State_____



Desks in the photograph are topped with G-E Textolite in the popular Birch wood grain finish.

Savings start immediately with G-E Textolite* plastic desk tops

in Central School, Homewood, Illinois

SUPERINTENDENT Elmer H. Schultz of Central School was looking ahead to long years of lower maintenance when he selected desks with G-E Textolite tops to replace old desks. He knew G-E Textolite was mar and scuff-proof — that ink wouldn't stain it — that years hence it would still be lustrous and showroom clean.

He found soon after installation that costs were immediately lowered because G-E Textolite cleans so easily. Classrooms with G-E Textolite topped desks can be cleaned in much less time than old-fashioned tops. Students, too, take pride in keeping their desk tops clean and neat.

With G-E Textolite you're money ahead on maintenance and cleaning costs — from the minute they are installed.

Write for color chart and installation information.

** Reg. U. S. Pat. Off.*

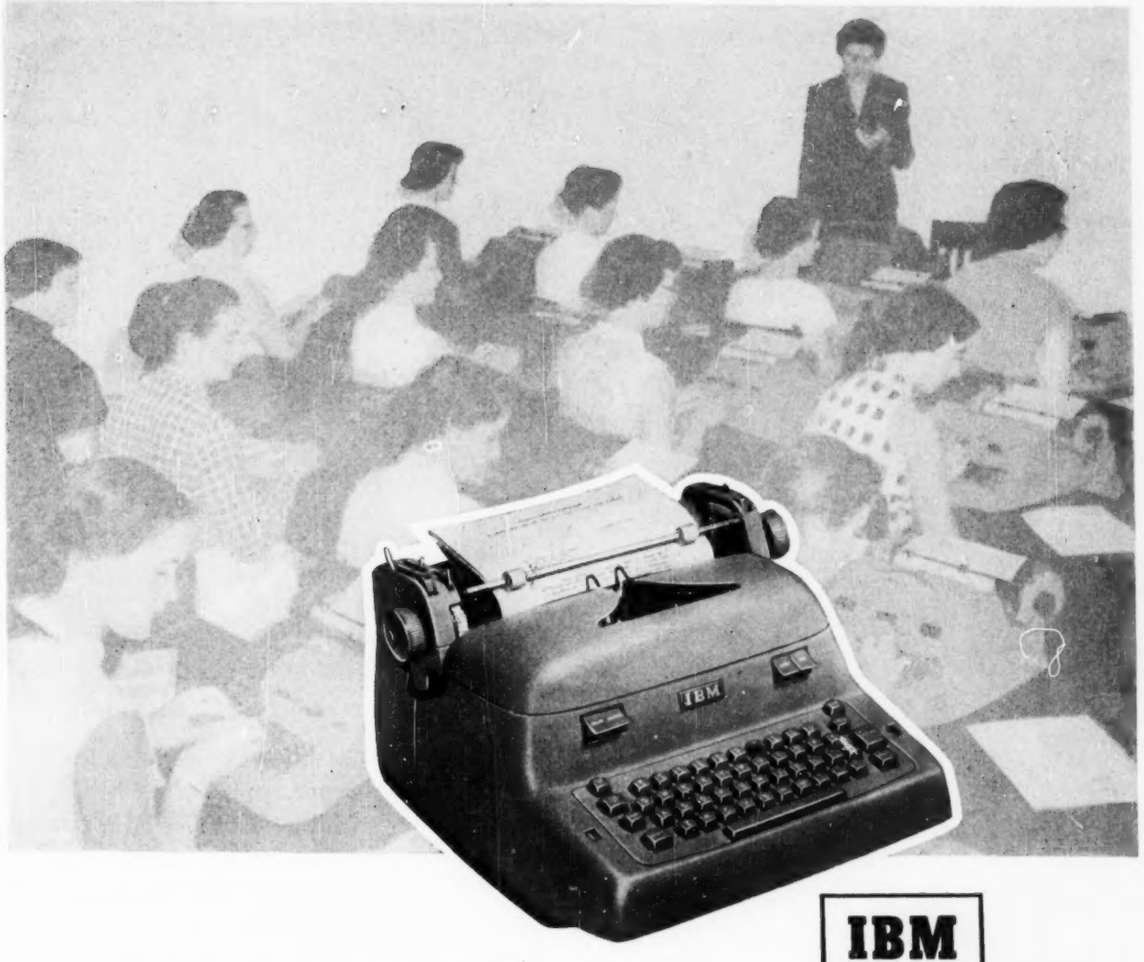
NATIONWIDE Roddiscraft WAREHOUSE SERVICE

Cambridge 39, Mass. • Charlotte 6, N. C. • Chicago 32, Ill. Cincinnati 4, Ohio • Detroit 14, Mich. • Kansas City 3, Kan. Los Angeles 58, Calif. • Louisville 10, Ky. • Marshfield, Wis. Miami 38, Fla. • Milwaukee 8, Wis. • New Hyde Park, L. I., N. Y. • New York 55, New York • Port Newark 5, N. J. • Philadelphia 34, Pa. • St. Louis 16, Mo. • San Francisco 24, Cal. San Leandro, Cal.

Roddiscraft

RODDIS PLYWOOD CORPORATION
Marshfield, Wisconsin

Still another school goes IBM!



The Winslow Secretarial School of Boston reports these benefits from IBM Electric Typewriters:

Greater Student Proficiency. After eight weeks on electrics, students type at rates far superior to any ever recorded in manual typing classes . . . easily transfer their new proficiency to manual machines.

Higher Enrollment. Winslow's enrollment has shot up as a result of offering electric typewriter instruction. Students desire IBM Electric training in order to qualify for preferred positions.

Better Jobs for Graduates. Businessmen are looking for superior typists—typists who have been trained on IBM Electrics.

Why not bring these benefits to your school? Write today for full information about IBM Electric Typewriters.

INTERNATIONAL BUSINESS MACHINES

IBM

Electric Typewriters

"THE TEACHING TYPEWRITER"

IBM, Dept. AS
590 Madison Ave., New York 22, N. Y.

☐ Please send booklet, "Electric Typewriters in Education," and latest classroom results.

☐ We'd like to see your full-color sound movie, "Electric Typing Time," on

_____
(date)

Name _____

School _____

Address _____

City _____ *State* _____

Nature Controls the Heat . . . . . .

James Solomon Russell School, Brunswick County, Va. Total square footage – 67,356. Cost $524,870. Heating Contractors: W. J. Bloomfield & Son, Inc., Farmville, Va.

Dixon & Norman, Virginia architectural firm specializing in schools, specify Webster Moderator Systems for efficient heat in open-plan buildings fed by long steam lines.

"Nature makes the weather, let her operate the controls" – so say Dixon & Norman, Richmond architects and engineers.

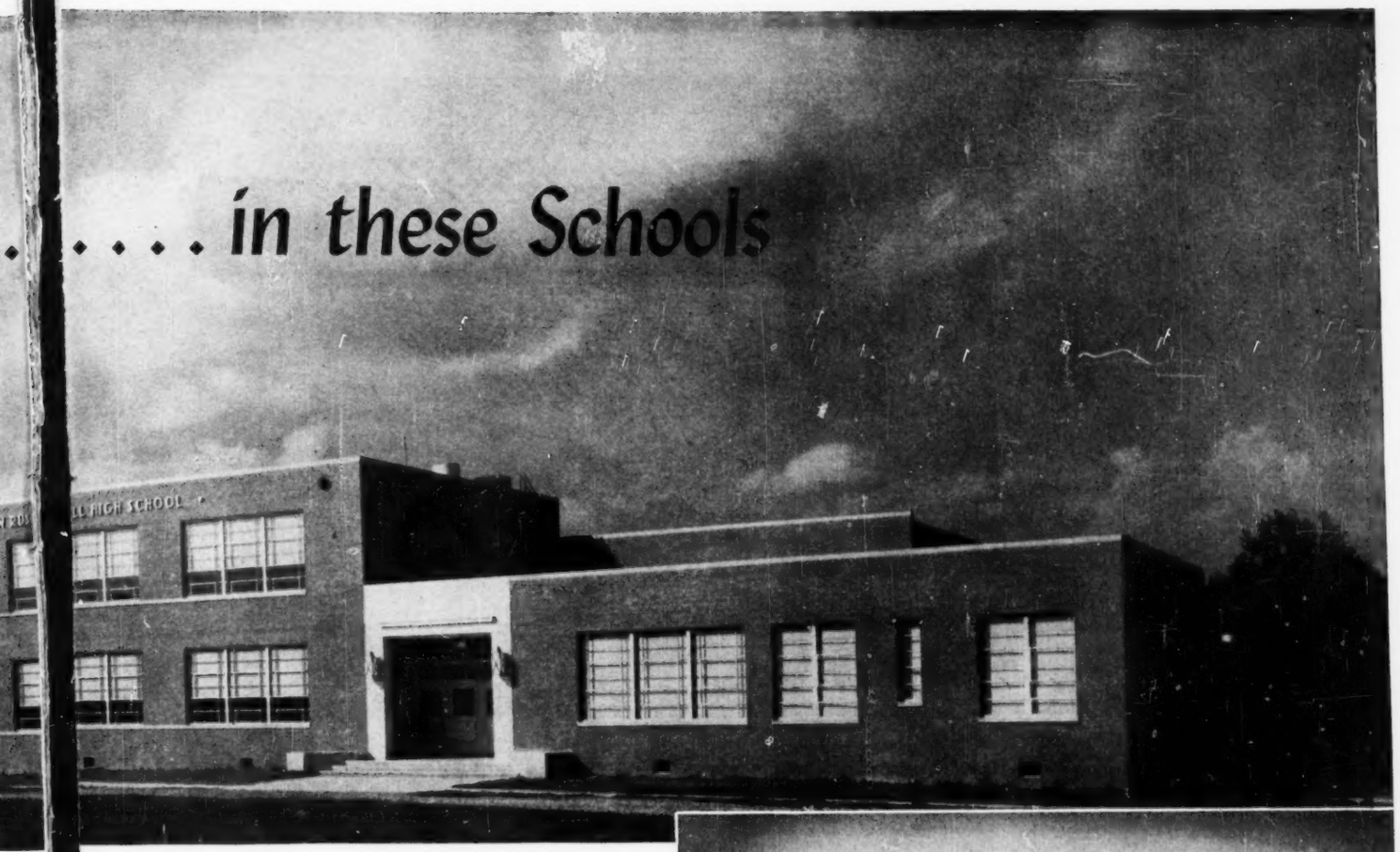
Dixon & Norman use centrally controlled continuous flow steam heating systems in all of their larger schools – for comfort and economy. In each of the schools illustrated, heating is controlled with a Webster Electronic Moderator System.

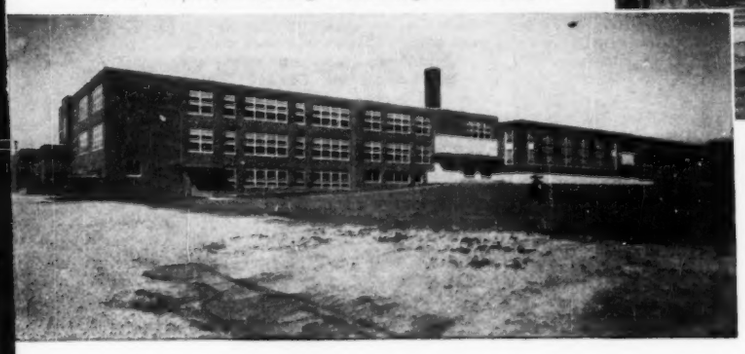
"Many of our schools are also used for community activities," Dixon and Norman point out. Classrooms are larger than average and auditoriums, gymnasiums and shop areas are in separate wings. Despite long steam lines, there is no concern about balanced heat distribution because the Moderator System delivers heat evenly and rapidly to every section of a building. Its simplicity makes it ideal for areas where skilled maintenance help is lacking."

The Webster Moderator System gives Dixon & Norman "the opportunity of using unit heaters, unit ventilators and other blast loads on the same mains because they are constantly supplied with steam, even in mild weather. This saves the expense of installing additional long steam mains and feeding them directly from boiler pressure."

Montevideo High School, Montevideo, Va. Total square footage – 75,268. Cost – $622,740. Heating Contractors: J. H. Cothran Co., Inc., Altavista, Va.

. . . . in these Schools





For information about Webster Products for school heating, call the Webster Representative or write us.

Address Dept. AS-1

WARREN WEBSTER & COMPANY
Camden 5, N. J. Representatives in Principal U. S. Cities
In Canada, Darling Brothers, Limited, Montreal

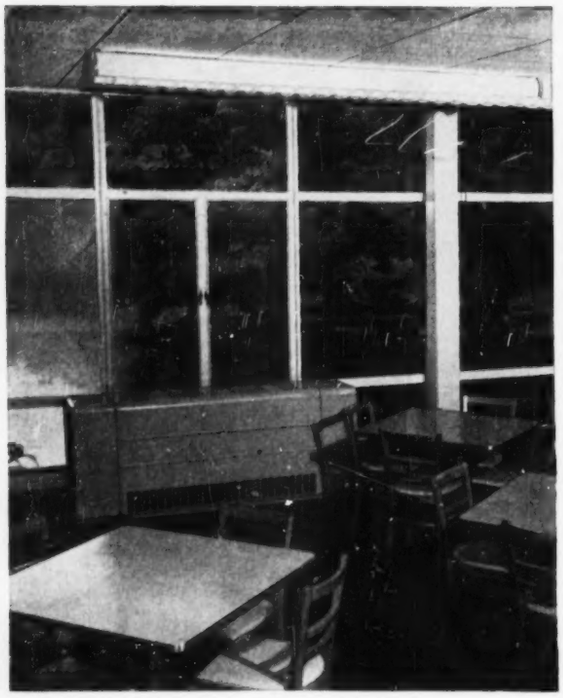
WEBSTER
MODERATOR
SYSTEM
OF STEAM HEATING

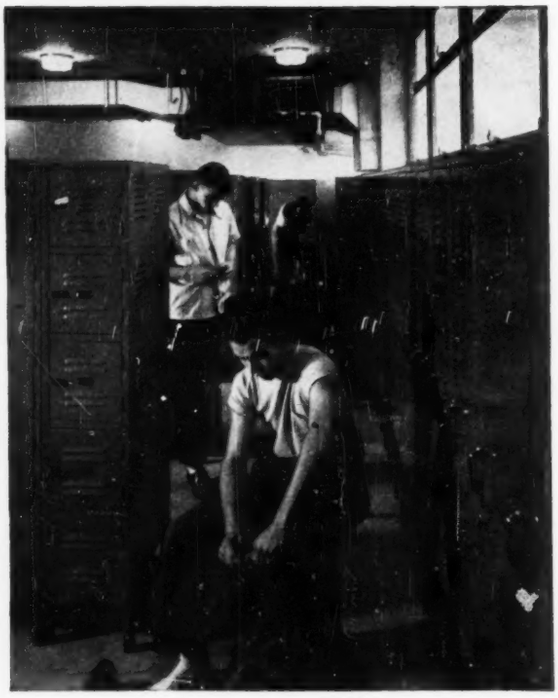
"Controlled by the weather"

Hermitage High School, Richmond, Va. Total square footage – 91,105. Cost – $928,680. Heating Contractors: W. H. White, Plumbing & Heating, Richmond, Va.

(Center) Union High School, Caroline County, Va. Total square footage – 36,118. Cost – $432,000. Heating Contractors: J. H. Cothran Co., Inc., Altavista, Va.

John J. Wright School, Spotsylvania County, Va. Total square footage – 57,867. Cost – $635,000. Heating Contractors: W. J. Bloomfield & Son, Inc., Farmville, Va.





Classroom . . . Locker Room . . . Gym . . . Doorway . . . Hallway

Trane Heating and Ventilating Serves Everywhere in the School

From kindergartens to colleges . . . from giant auditoriums to tiny offices . . . from drafty entrances to steaming shower rooms—TRANE equipment solves countless school heating and ventilating problems.

In Classrooms—The floor-to-ceiling glass wall of a Connecticut classroom threatened to create drafts and a cold window zone. By spreading a blanket of heat over the window area, TRANE Unit Ventilators solved these problems, while filling the room with clean, fresh air.

In Locker Rooms—Starved for fresh air, locker rooms become dark, pungent, offensive . . . so designers of the Oak Ridge Atomic Project High School solved the problem with ceiling-mounted TRANE Volume Ventilators. Now young athletes dress in draft-free areas . . . in fresh, warmed outside air that's blended with room air and gently circulated from overhead ducts.

In Gymnasiums—Heat trapped by high ceilings is often wasted. To utilize this warm air, TRANE Projection Heaters, tucked away in the ceiling high above the occupied zone, pour heat down into the playing area of a new gym in Illinois.

In Doorways—Knowing that oft-opened doors would admit large volumes of cold air, designers of a school in Maryland placed a TRANE Force-Flo Heater just inside the doorway. Heat driven from this compact heating unit fills the entrance . . . blankets doors . . . blocks cold air and neutralizes drafts.

In Hallways—Heating units that would not collect dust, obstruct floor cleaning, or encourage "book parking" were needed near lockers in a Texas high school. Sloping-top TRANE Convectors provided the perfect answer.

Whatever your heating, cooling, ventilating or air conditioning problem is, look for the answer in the complete TRANE line.

Ceiling-mounted TRANE Projection Heaters save heat wasted at the ceiling, keep playing areas warm and unobstructed.

This TRANE Force-Flo Heater greets youngsters with a warm welcome and blankets doors with heat to block cold air.

The smooth, round-cornered cabinets of these TRANE Convectors protect children from accidental cuts and burns.

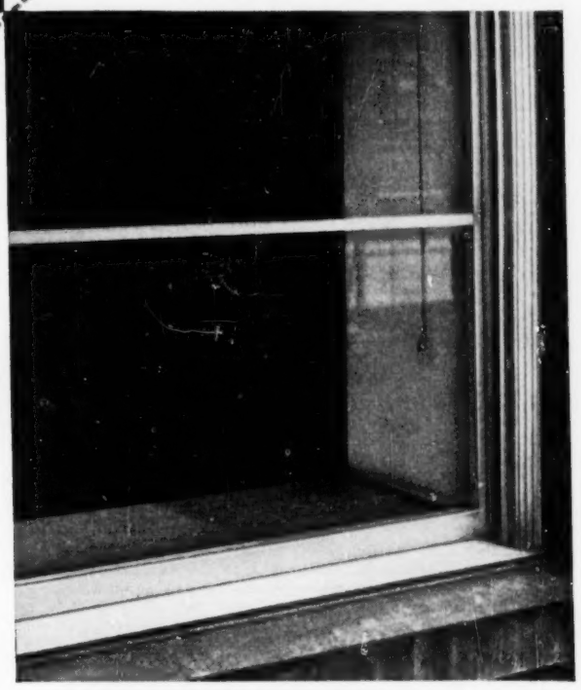
TRANE

MANUFACTURING ENGINEERS OF HEATING, VENTILATING AND AIR CONDITIONING EQUIPMENT

THE TRANE COMPANY, LA CROSSE, WIS.
Eastern Mfg. Division, Scranton, Pa.
Trane Company of Canada, Ltd. . . . Toronto
OFFICES IN 80 U. S. AND 14 CANADIAN CITIES

Continual maintenance...

or no maintenance at all?



This typical ADLAKE Window has been in service for 11 years, with no maintenance whatever!

Which would you choose for your windows?

It's true—you can end window maintenance once and for all with ADLAKE Aluminum Windows! No scraping . . . no painting . . . no repairing . . . they require *absolutely no maintenance whatever* except routine washing . . . for the life of the building!

And ADLAKE construction assures a perfect weather seal for life. The exclusive combination of woven-pile weather stripping and patented serrated guides gives snug protection against wind and weather, plus lasting finger-tip control.

For both replacement in older buildings and original installation in new, ADLAKE Aluminum Windows mean extra value, extra beauty, extra efficiency. Get the whole story today—you'll find ADLAKE Representatives in most major cities.

Adlake
aluminum windows!

Adlake 96th year of serving the transportation and building industries

THE Adams & Westlake COMPANY

Established 1857 ELKHART, INDIANA New York, Chicago

Blythe Park School, Riverside, Ill. Floor in block-patterned Northern Hard Maple. Perkins & Will, Chicago, Architects-Engineers.

NORTHERN HARD MAPLE

the finest floor that grows

...every one!

University of Florida, Gainesville, Florida. Floor of Northern Hard Maple. Mr. Guy. C. Fulton, Architect to Florida State Board of Control, Gainesville, Florida

Philip Sheridan School, Township of Tonawanda, Kenmore, N.Y. Architects F. J. and W. A. Kidd, Buffalo.

Pius XI High School, Milwaukee, Wis. Architects: Mark F. Pfaller Associates, Wauwatosa, Wis.

the gymnasium floor that's SUPERIOR... *in every way!*

The foresight of America's school building planners stands out in especially bold relief in the choice of flooring. Northern Hard Maple is, far and away, favorite among schoolmen... and with good reason. This tough-grained wood has tremendous resistance against scuffs and scars and dents—high *resiliency*—cheerful warmth and brightness—thrifty ease of cleaning and maintenance. And "*there's always a new floor underneath*" when long usage calls for refinishing (a simple process nowadays!). Readily available in all grades—look into the economy of colorfully grained **MFMA** Second Grade, especially in the tight-laying 1½" face widths. See Sweet's (Arch. 12k MA) for specification details on regular strip and mastic applied blocks and patterned flooring, or write . . .

MAPLE FLOORING MANUFACTURERS ASSOCIATION
Suite 588, Pure Oil Bldg., 35 East Wacker Drive
CHICAGO 1, ILLINOIS

FLOOR WITH *NORTHERN* HARD MAPLE
BEECH AND BIRCH

Deerfield (Illinois) School. Architects, Perkins & Will, Chicago.

Why these wide open schools?

Because architects are designing them for two kinds of space: the kind that's built, measured with a ruler, and the kind that's felt, sensed with your eye.

To make classrooms *seem* more spacious, they are being built today with clear glass from wall to wall and sill to ceiling. Some rooms have glass from *floor* to ceiling. Clear glass does *not obscure* vision. The eye slips past the ceiling to the sky and the surrounding greenery. This creates unity between the inside and the out-of-doors. It makes any room seem larger.

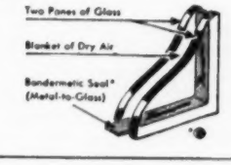
Clear glass also admits the maximum amount of daylight, so that daylight-engineered schools are flooded with natural light. Such design solves the problem of glare because it reduces contrasts in light, the too sharp contrasts that *produce* glare.

Another advantage of using clear, flat glass for entire walls is its low cost. Clear, flat glass is the lowest cost glazing material you can buy and the cheapest to install.

But low cost is not the big reason for building-in sunshine and view. It's because children and teachers—in fact, office and factory people, nurses and patients, homeowners and apartment dwellers—just naturally love walls of daylight!

Whenever you're going to build, please write for our literature on DaylightEngineering and *Thermopane*. Libbey·Owens·Ford, 4013 Nicholas Building, Toledo 3, Ohio.

WHERE WINTERS ARE COLD, Thermopane® insulating glass is widely and successfully used. Thermopane with ½" of dry air hermetically sealed between two panes has twice the insulating value of single glass. This minimizes chilliness, drafts and heat loss at windows. Write for Thermopane literature.



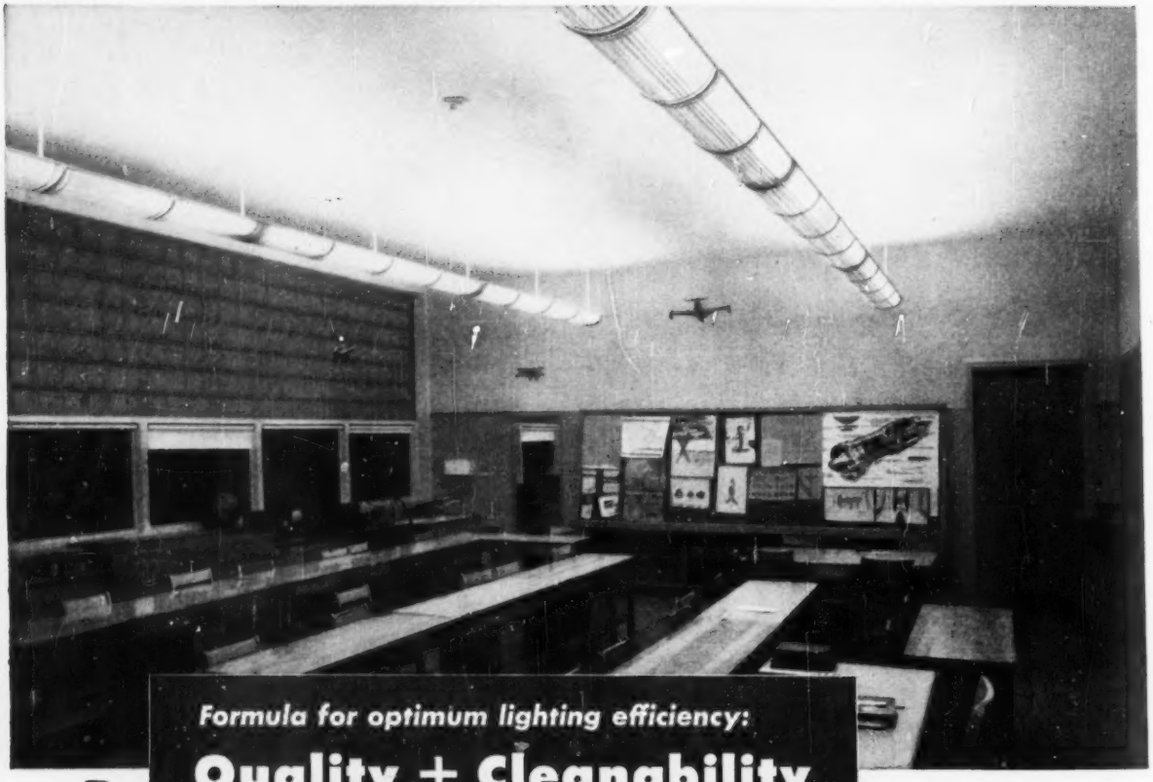
L·O·F GLASS PLASKON FIBER-GLASS

DAYLIGHT WALLS

THAT DON'T OBSCURE VISION

THERMOPANE • PLATE GLASS • WINDOW GLASS

Other L-O-F Glass Products: Vitrolite Safety Glass E-Z-Eye Safety Plate Tuf-flex Plate & Doors Fiber-Glass



Formula for optimum lighting efficiency:

Quality + Cleanability = the Wakefield STAR

Making Light Work of It with Wakefield Maintenance Equipment

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Note: the Wakefield maintenance equipment shown is available free to purchasers of Stars in specified quantities. We will gladly give you details.

There are good reasons why the Star is recognized as a superior classroom luminaire and why it is so often recommended for "Co-ordinated Classrooms" (as well as offices, drafting rooms and other areas where critical seeing tasks are performed).

QUALITY OF LIGHT. Luminous Plaskon reflector sends most of the light to the ceiling, to be distributed evenly all over the room. Result: a minimum of reflected glare. The reflector, which completely hides the lamps, has about the same brightness as the ceiling. Result: a minimum of direct glare.

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The Star is equipped for pre-heat and rapid-start bipin and slimline lamps. See American School & University. Or write to The F. W. Wakefield Brass Company, Vermilion, Ohio.

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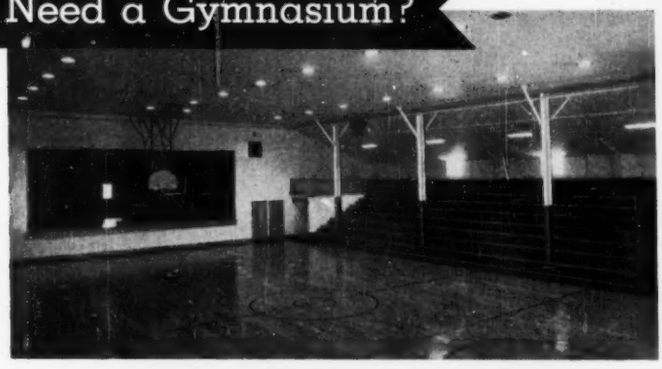

SEE THE PLAYING FLOOR from any seat in this Butler gymnasium building. It has good ventilation, was easily insulated. Community School officials at Barry, Illinois, are very happy with their Butler Gymnasium. And they saved "35% of the cost of conventional building material!"

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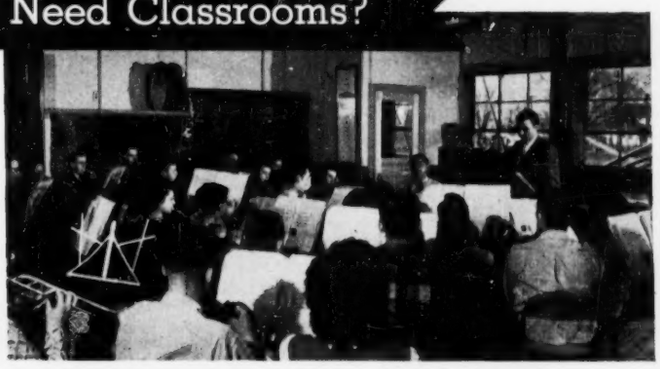

WELL INSULATED . . . for the students' health! This Butler Building at Kahoka, Missouri, is completely insulated for even heat in winter and cool comfort in spring and fall. All Butler Buildings are easily insulated with low cost materials. Just as effectively as conventional buildings—and a lot faster!

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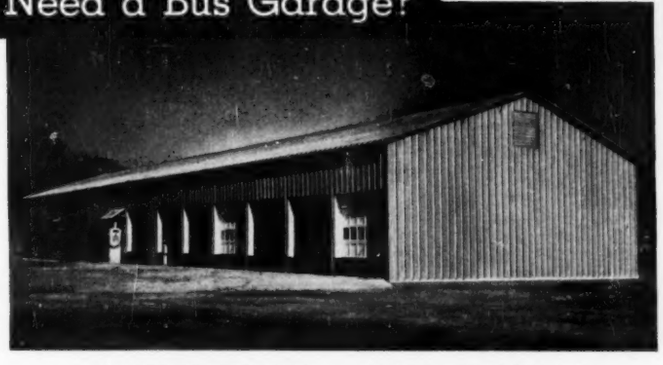

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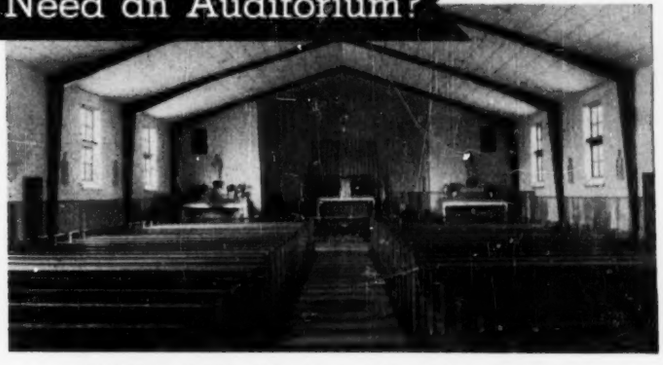

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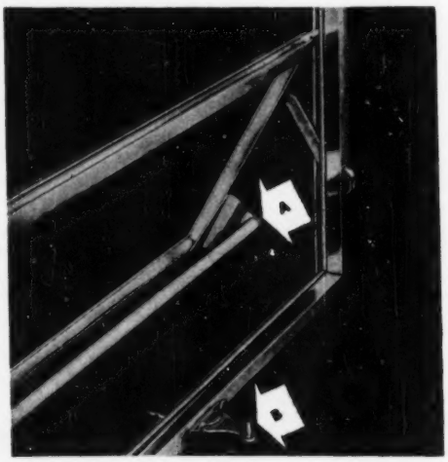

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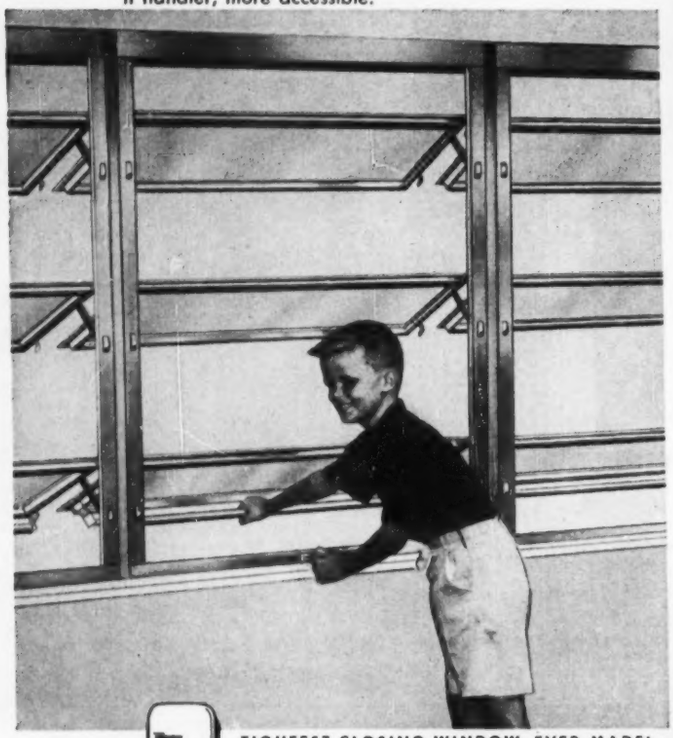
Improved locking feature securely locks bottom vent . . . extra protection against intruders. Center position makes it handier, more accessible.



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As a special feature of Wilmette's new Logan School, each classroom has a Crane sink with built-in work counter and shelf-storage space. Architect: Childs & Smith, Chicago; General Contractor: Axel Johnson, Chicago; Plumbing Contractor: Dearborn Plumbing & Heating Service, Chicago.

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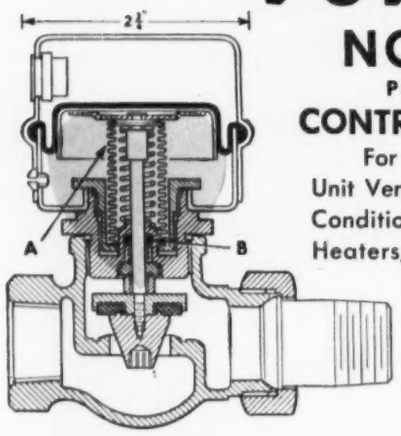

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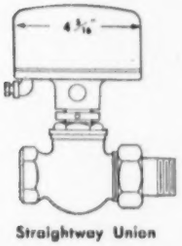
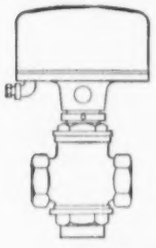
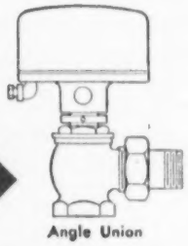
For utmost dependability and lowest cost maintenance specify control by Powers NO-PAK Valves.

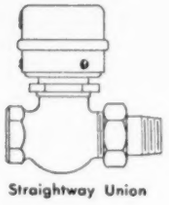


Straightway Union
3-Way Screwed Ends

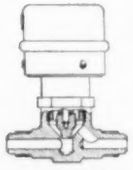




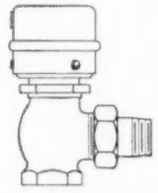
Angle Union



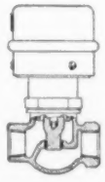
Straightway Union



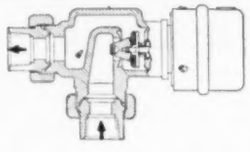
Flared Ends



Angle Union
◄ Screwed Ends



Below: Reverse Flow Double Union



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THE AMERICAN
School Board Journal
A Periodical of School Administration
JANUARY 1953

The Economics of Recent Atomic Energy Developments

With Implications for School Building Planning

*Sol Levin, Ed.D.**

School officials everywhere in the nation who are engrossed in carrying on a new school building program, as well as those who are concerned with the operation of an existing school plant, must be giving at least a fleeting thought to such questions as: What exactly is the current status of atomic power development for peacetime use? Will the expensive heating plants which we are putting into our new schools be obsolete in a few years? Will the atomic "furnace" be the solution to our annual fuel problems? Can we expect lower electrical rates as a result of atomic power? Will the price of basic building materials be reduced because of industrial use of cheaper power and processes resulting from developments in atomic power? Undoubtedly the most frequent and pertinent question is: When can we expect the Atomic Utopia that has been promised us mainly by the so-called "popular" scientific writers.

Probably the most comprehensive and scholarly research into the economics of atomic power was that undertaken by the Cowles Commission for Research in Economics at the University of Chicago. The report of the Commission,[1] which gives us the opinions of many leading economists and engineers, should at least provide clues to the answers of the above questions.

The Commission is emphatic in its cautions that the materials in its report must be interpreted purely in the light of the technology as it existed at the time of the report (1950), and that new technological developments could alter the situation almost immediately. However, since the date of the publication of the Report the eruption of the Korean War and the continuing mounting of international tensions have favored the concentration of effort primarily on the development of new atomic weapons, rather than on the peacetime use of atomic energy. Because of the nature of the research which is geared primarily to the defense effort, close security becomes necessary to protect atomic developments, so that even if startling discoveries are made in the government research laboratories, the information, which may be applicable to more peaceful purposes, cannot often be revealed.[2]

Atomic Energy and Future Power Costs

It does not require an extensive technical knowledge to comprehend the basic issues involved in the determination of the cost of electric power produced by conventional means as compared with that from atomic energy.

The most important sources of power used in operating our electric generators today are coal and water. The coal, of course, is used in the furnaces of boilers to produce steam for the steam turbines which drive the generators; whereas in the case of hydroelectric plants, the kinetic energy of moving streams of water propel water turbines which in turn operate the generators. This raises the question, "How would the atomic power plant operate?"

First of all, according to our current technological knowledge we have not found a way of extracting commercially useful electricity directly from the chain reaction within the nuclear reactor or "pile." While this is not considered an impossibility, an authority is quoted in the Report as saying, "There is not even a vaguely promising method that has been put forward to date for converting fission energy *directly* into electrical or mechanical energy." This implies, so far as we now know, the only way that we have to use the nuclear reactor in the generation of electric current is by the indirect method of using the heat it produces (in the chain reacting process) in place of that produced by the burning of coal in the steam boilers, as described above. In other words, the reactor would take the place of the coal furnace; all of the other power plant equipment would remain essentially the same.

Another factor which must be considered, and one which will limit the use of atomic power, at least for a while, is the matter of the massive amount of shielding which is required to protect operating personnel. At least 100 tons of shielding materials are necessary even for comparatively small reactors.

Therefore, from the technical and economic standpoints today, the most feasible use of nuclear reactors for power production would be in a large, central power plant which would distribute the electrical energy much as our conventional power plants do now.

From this the experts arrive at some indication as to what we can expect in terms of costs of electricity from atomic power plants as compared with that from the conventional

*Specialist, Baltimore Department of Education, Business Office, Baltimore 18, Md.

[1]Sam H. Schurr and others, *Economic Aspects of Atomic Power* (Princeton, N. J.: Princeton University Press, 1950), 289 pp.

[2]C. G. Sints, "Nuclear Power Isn't Cheap Yet," *Chemical Engineering*, 58:246 plus, Mar., 1951.

plants. Assuming that the only difference between the two plants is the substitution for the coal furnace of a massive and relatively expensive nuclear reactor, the difference in cost of power to the consumer will be essentially the difference between the cost of purchasing, operating, and maintaining the reactor as compared with that of the coal-fired furnace. Since the "fuel" of the reactor is indestructible, for all practical purposes (and actually "breeds" more fissionable materials in the chain reaction process), the operation costs of the reactor is estimated to be in the vicinity of 20 per cent of its total costs, as compared with 50 per cent for a coal-fired plant. But, on the other hand, the fixed charges (cost of investment) would constitute about 80 per cent for the atomic plant as opposed to about 50 per cent for the conventional fuel-burning plant.

Because of so many unknown factors at this time it is difficult to predict comparative costs. Indications are, however, that generally there should not be any extreme differences in the cost of electricity produced by the atomic plant as compared with the conventional fuel burning plant. This of course would vary with the locality, the availability of conventional fuels, transportation costs, and the extent of local power requirements. An important point to keep in mind is that, whereas technological advances in the atomic power plant of the future might tend to make it a substantially more economic and desirable source of power, on the other hand, the possibility of significant technological developments in the processes and uses of our conventional fuel, or the development of new, cheaper, and better synthetic ones, should not be overlooked.

Perhaps a more reasonable comparison can be made between the relative costs of power produced by hydroelectric plants and that by nuclear reactor plants, since both use sources of energy that for practical purposes are nonconsumable. Whereas it is true that the lowest electrical generating costs exist at certain hydroelectric developments in the world (4 mills per K.W.H.), which, according to the Cowles Commission, is cheaper than the lowest cost now conceivable for atomic power, on the whole, the costs would be comparable to the cost of atomic power, and in some cases would even be more expensive. Again, it is a matter of geography and the availability of human and natural resources in a particular locality.

In the meanwhile, despite the defense demands on our research workers, during the past year an important and historic development occurred in the use of atomic power for peacetime purposes. At the National Reactor Testing Laboratory in Idaho, for the first time, the heat from a reactor was used to produce the steam needed to operate a conventional, practical electric generator — the output was 100 kilowatts.[3]

Of what significance is this in the estimation of leading power engineers? The feeling seems to be, as expressed by one of these leaders, that it will take from 20 to 40 years before atomic energy will have any effect on the electric power industry; the developments will be evolutionary rather than revolutionary and atomic energy will supplement and not supplant our current fuels.[4]

The Atomic Heating Plant

On the basis of currently envisaged techniques for the production of atomic energy in useful form, the heating of residences and schools, for that matter, will probably be accomplished by the transmission of energy in some form from a central heating plant. An individual nuclear furnace, even for a large school building, is most unlikely, both because of the reactor's space requirements and because the energy requirements could be satisfied by a unit well below the probable range of practical reactor sizes conceivable today.

Whereas the central atomic power plant could provide heating service by merely generating electricity as described previously, and using this energy in electric heaters in the schools, it is the opinion of engineers and economists that the reactor could be used more efficiently and economically as a direct source of heat, that is, for providing hot water or steam which would be piped to various buildings, rather than through the method of generating and distributing electricity. The situation might be considerably altered in this regard if the electrically powered "heat pump"[5] which is presently in the early stages of development, can be produced more economically and efficiently than it is today.

The economic feasibility of atomic-powered district heating is another matter that must be considered along with the above technological possibilities. In this consideration the factors of population density and the year-round temperature of a particular locality seem to be the important ones. With weather conditions as they exist in the average highly populated areas in the United States, authorities believe it would be necessary to have at least 13,000 and possibly 15,000 inhabitants per square mile to make nuclear district heating economically feasible.

According to the Cowles Commission, it seems reasonable to conclude that nuclear heating might make noticeable inroads into the space-heating market satisfied at present by ordinary fuels and conventional heating equipment, but would probably be confined to a limited number of northern cities which are densely populated. On the other hand, the cost reductions which would result from the substitution of nuclear heat for conventional fuels would probably be quite modest. Actually, nuclear heat costs and ordinary heating costs would appear to be about the same in those places where nuclear heat can compete at all. Under these circumstances there might be some shifting to nuclear heat either because of slight cost advantages or convenience in use or both.

In the meanwhile, it is noteworthy to mention that the year 1951 saw the first experimental use of a nuclear reactor as a source of heat for a building — an office building at the atomic laboratories in Harwell, England.

Effect of Atomic Power on Building Material Costs

A likely question that might be raised would be concerned with the possible effect which the development of atomic power plants for industrial use might have on the future production and costs of the basic building materials.

Economists and engineers who have studied this problem have certain opinions which are suggestive. For example, they say that if low-cost atomic power becomes available to the steel industry, it might tend to encourage the exploitation of relatively small ore deposits scattered throughout the country, which in turn would lead to greater geographical diffusion of steel production. Under certain conditions it is also reasonable to assume that a new metallurgy developed by atomic power might provide for an expanding steel output in undeveloped areas of the world. In either event the experts seem to feel that no large cost reductions in the production of steel appear likely.

A similar conclusion has been reached regarding aluminum production and costs; that is, while locational shifts might occur as a result of atomic power, they would not bring about major reductions in aluminum prices.

It appears as though the brick and cement industries will not benefit to any extent from atomic power development as we see its potentialities today. The main obstacle is the fact that very few cement mills and practically no brick manufacturing plants have sufficient size and productive capacity to make economical use of even the smallest, practical nuclear reactor possible with present technological knowledge. Of course this handicap might be overcome if the reactor could be shared by some neighboring large-scale industrial users.

The data obtainable on flat glass indicate that the cost reductions that might be possible with the use of atomic power would be in the neighborhood of 2 per cent.

The only conclusion that can be reached from the above observations is that if future building costs are to be lower, the reason will not be because of cheaper atomic power, that is, if we are thinking in terms of our currently used building materials and processes.

Atomic Warfare and School Plant Planning

Whereas it is the purpose of this article primarily to discuss peacetime applications of nuclear power with their possible implications for school officials, a depressing, but unfortunately important aspect of atomic

[3] W. H. Zinn, "First Atomic Power Plant," *Power Engineering*, 56:54–5, Feb., 1952.

[4] "U. S. Atomic Progress," *Mechanical Engineering*, 73:737–8, Sept., 1951, and Harry A. Winne, "Atomic Energy's Place in Your Plans of the Future," *Power Engineering*, 54:98 plus, Aug. 1950.

[5] The heat pump extracts heat from the earth and transfers it into energy to heat the house. The process can be reversed to cool the house in the summer.

energy might be briefly considered at this point — the matter of defense against atomic warfare as a factor in school plant planning.

The National Security Resources Board has recently launched a campaign of encouraging industrial dispersion as a tactic of employing space as a defense against the destructive possibilities of atomic bombing.[6] Its object is to disperse new and expanding industry away from congested centers, rather than to move established industry. The Board points out that this dispersion is a security necessity because, according to our best military advice, our potential enemy has bases from which his bombers can reach any target within the United States, whereas our air defenses can be expected to destroy no more than 30 per cent of the attacking enemy planes.

The action of the Security Resources Board could have profound implications for the school officials who are planning a new school construction program. Obviously it can become a vital concern to both the highly industrialized school districts as well as to those in certain sparsely settled residential areas. In the former, industrial dispersion could mean a wholesale emigration of population, while in the latter, the possibility of an industrial "invasion" must not be overlooked.

These possibilities place the responsibility upon school planners in every locality to consult with other state and local planning agencies as well as with industrial leaders in the vicinity and, if necessary, with the National Security Resources Board for proposed industrial moves in the area.

The Board, incidentally, advises industrial leaders who might be planning to take part in the dispersal program, because it would be to their advantage to consult with school authorities, along with other interested governmental agencies, before acquiring sites for proposed new plants. However, the school official who complacently sits back and waits for such information may eventually regret his lack of foresight and initiative in this regard.

What about the school district that because of its location in the heart of industrial activities is a likely military target? To what extent should the possibility of a war influence the location and type of construction of new school buildings in such a situation?

Schools must be planned and built by those who envisage the future optimistically, rather than by those who are timidly motivated by the fear of war and destruction. The basic principle in school planning must continue to be one of building where the populace now resides and, to the best of our calculated estimates, will probably reside in the future. As long as a careful study has indicated that the children will continue to live in a possible "target area," the schools logically should be there, with adequate educational facilities. This does not imply that defense should be ignored in school planning, but rather that the people and their educational needs should be the primary consideration.

It may be possible and justifiable, under certain conditions, to include structural provision for an air raid shelter area within each school building. For example, because of the nature of the particular sites of two new school buildings which are now under construction in Baltimore, it was possible, for a small additional cost, to provide a basement play area and community room which can double for an air raid shelter. This area is under a structural slab first floor and will have two-way exits.

Finally, the National Security Resources Board has recently issued a publication[7] dealing with structural design as it relates to the resistance of a building to destruction by atomic explosions. This booklet should be of interest to school officials in potential "target areas," particularly where this matter may be an important issue in a school building project.

[6]U. S. National Security Resources Board, *Is Your Plant A Target?* (Washington: Government Printing Office, 1951), 16 pp.

[7]U. S. National Security Resources Board, ***Damage from Atomic Explosion and Design of Protective Structures*** (Washington: Government Printing Office, 1950).

Hints on

Choosing an Architect

for Your School

Josiah H. Child*

Members of school building committees have as their first important duty the selection of an architect who has the professional and technical ability to translate into a building the educational needs of a school district. Only two acceptable methods of choosing an architect are available to a public school building committee: (1) a design competition, and (2) a competitive selection from a list of candidates who are given a fair opportunity of an interview to present their qualifications.

The first method has some merits and will insure the selection of an architect with outstanding design capabilities, provided the competition is conducted carefully under the regulations prepared by the American Institute of Architects. These regulations based on decades of experience provide for the employment of a professional adviser and the use of a carefully developed series of steps. No responsible architect will enter a competition which is not A.I.A. sponsored.

The A.I.A. design competitions are either of the open or the invited type. An open competition permits the entry of any registered architect regardless of age, experience, or location. An invited competition is limited to experienced architects — usually six or eight firms who have unusual qualifications and experience fitting them to design a proposed building.

Whatever method of selecting an architect is followed, preliminary interviews between the building committee and architects are necessary. The following rules are useful if applied at the outset.

The Direct Selection Plan

1. Limit the number of architects interviewed to not more than 10, if possible.

2. Reduce the list of applicants after the first interviews to five or six. Have the committee visit recent buildings erected by the architects. Do not necessarily limit the visits to school buildings; insist that the architects accompany the committee.

3. Reduce the list to three architects, and then visit these in their offices.

4. Make the final selection on the basis of the following ten general considerations:

A. Education. During the interviews it would be of interest to discover where the architect got his architectural education and how many years he spent acquiring his education. Most schools of architecture require five years to get a degree. Most states require that an architect have a degree, plus three years' work in an office before he can qualify for Registration.

If possible, visit an architectural school to learn what the education of an architect consists of. Most of the time during the five years of study is spent doing architectural problems similar to the one you will be handing out. Briefly, an architect's training consists of learning how to create a workable whole in three dimensions from a program written on paper.

Not all good architects have received their

*Partner, Ames, Child, and Graves, Architects, Boston 8, Mass.

education in an architectural school. Some have been able to afford only a few years or a few months in school; some have been able to go to night school only. There are many good night schools; for example, the Boston Architectural Center, where professors from both Harvard and M.I.T. and distinguished practicing architects give their time without remuneration. The education of an architect can be gained wholly or in part in an office under the guidance of an experienced architect who may be a very fine teacher and critic.

Types of Needed Experience

B. **Office Experience.** It is of particular concern to the committee to know in what offices a candidate worked before he became a principal. Each candidate should present an outline of his experience and the buildings he worked on while in various offices. Some men have held very responsible positions in large offices before becoming principals.

C. **Public Work.** The architect you employ should have had experience in public work. The bidding procedures required by state laws are complicated and not too clearly defined. In most states a school board is practically required to give the contract to the lowest bidder. Under this system it is possible that the contractor who will build your school may not be of the highest caliber. To handle such a contractor requires an architect who has tact, business ability, and a firm hand.

D. **Clear and Complete Plans and Specifications.** Contractors often bid low in the hope that they can compensate during the course of construction by charging heavily for extra work. One way to forestall this is to have very complete plans and specifications and making as few changes as possible afterward. Ask each architect for a summary of the bids received on some of his work. If these bids are close and do not vary more than 25 per cent between the lowest and highest, you can be reasonably sure that plans and specifications were clear and complete.

E. **Cost Consciousness.** Employ an architect who can design within your budget. There is nothing more embarrassing to a committee than to have to go back for more funds. Ask for a cost analysis of recently completed work: cost per cubic foot and, what is more important, cost per pupil.

Engineering and Total Fees

F. **The Architect and the Engineer.** Do not confuse the architect and the engineer. To design a school, you must employ an architect. The architect is the leader and co-ordinator in a building operation.

The architect will employ the engineers — including the structural engineers, heating engineers, sanitary engineers, and electrical engineers. He will probably also employ an acoustical engineer and a landscape architect. The architect pays for the services of all these engineers. He does not, however, pay for the topographical survey or for the borings. Engineering services may be performed by members of the architectural firm employed, or these services may be rendered by someone outside the firm. In either case, the school board and the building committee should have information on the individuals upon whom these responsibilities fall.

G. **Supervising of the Work.** One of the chief responsibilities of the architect, once the contract has been signed, is supervision. Find out who will do the supervisions. It need not be one of the principals of the firm. It is, in fact, often better that the architect employ someone whose principal job is the supervision of the work. In this connection, find out what former clients think of the supervisory service of the architect.

H. **Fees.** Do not worry about fees. Every reputable architect will charge approximately the same fee. A schedule of fees has been worked out and approved by the American Institute of Architects. Fees for preliminary sketches will vary somewhat, as this part of the work has never been clearly defined by the A.I.A. Whatever is paid to the architect for preliminary sketches will be subtracted from the total fee. No architect has ever become rich — most good architects are more interested in their work than in the remuneration for it. The fees for a good architect are no higher than the fees of a poor architect.

Design for Today

I. **Design Quality.** The major factor in a final selection should be the design quality. Fortunately, the days of dictating a style for a school are over. We can no longer afford the columns, porticos, monumental stairways, and other classical embellishments which added nothing to the function of a school but increased the first cost and the maintenance.

Instead, a contemporary style building with good proportions and proper arrangement of masses will make your school an attractive one. This type of structure requires a more talented and sensitive designer than did the copies of Gothic town halls or Roman temples.

J. **In General.** Do not be afraid to employ a young architect if you feel he is talented. If you think he has not had enough experience, ask him to associate himself with an older firm. Such associations are frequently formed with benefit to the client and each of the architectural firms.

Beware of the specialist — the one who designs only schools. A good architect is trained to work on any problem and produce a good solution. If he has not designed a school heretofore, but has designed other buildings of merit, consider him more seriously than the architect who has designed only schools. The most celebrated architects are those who are the most versatile. There is available to every architect a wealth of material on school construction. If he is capable, he can make use of this material. Many states have a School Building Assistance Commission which is ready to help and advise any architect.

Consider the architect who, for the time being, has little work in his office rather than the one who has contracts for six or eight schools.

The salesman and the good talker is not necessarily the good architect. There are firms which employ good talkers who are not architects themselves and who, night after night, attend such meetings as you are holding. They will tell you they are architects and engineers who can perform every service and may even go so far as to say they can deliver an entire school in package form, including land surveys and borings — all for six per cent.

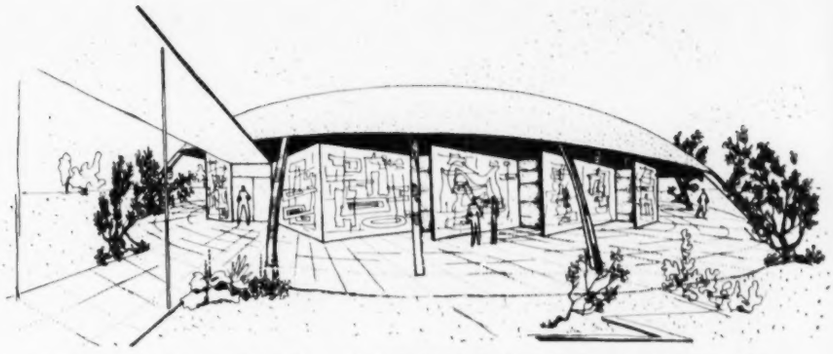
Choose an architect who has the personality which will enable him to get along with the committee and, at the same time, with the contractors — one in whom you are willing to place your entire confidence. The profession calls for men of strict integrity, of judicial sense, and of the highest competence.

The proposed high school in the New Orleans School Village would have court yards inside the wings. ***See next page.***

SCHOOL VILLAGES—

Possible Solution to a National Problem

*Charles R. Colbert**
*Norman Spray***



The suggested combination high school auditorium would serve for community as well as school purposes.

School boards facing enormous building needs with only limited funds in their treasuries probably have little regard for the old saying: "Where there's a will, there's a way."

The Orleans Parish School Board's Office of Planning and Construction did not put much stock in the sentiment either when it was created two years ago to set up a long-range building program and supervise the expenditure of $30,000,000 for new construction and renovation in the New Orleans public school system.

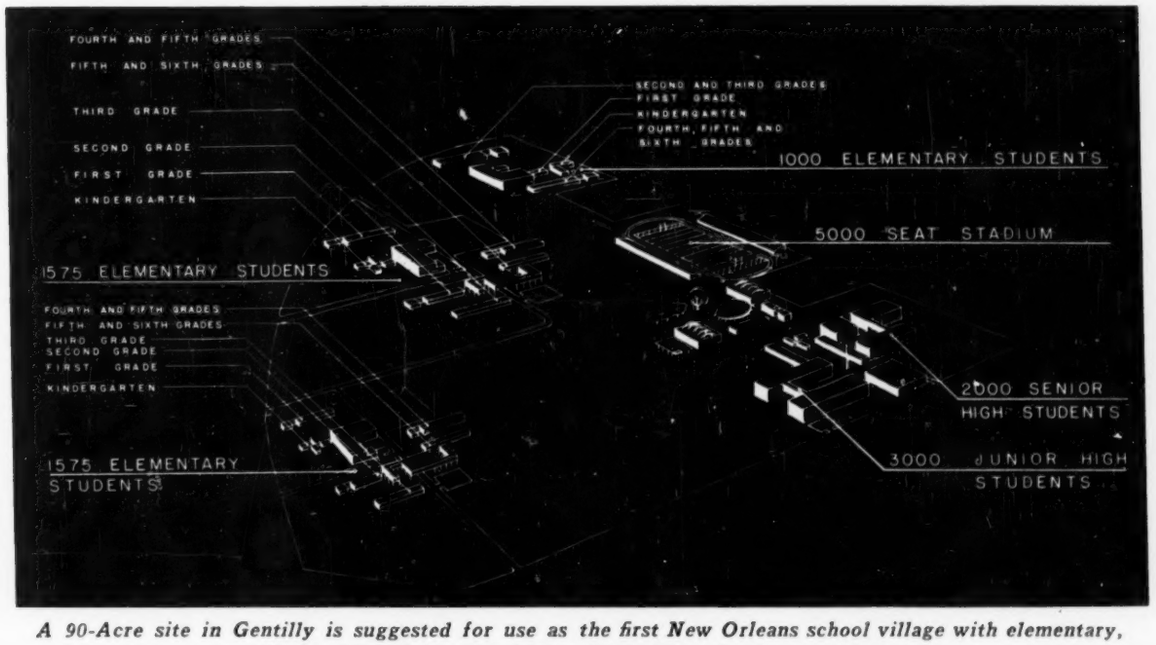
Supervising Architect and Planner for the Orleans Parish School Board.
Reporter, New Orleans "Times-Picayune."

That sounds like a lot of money, but reconstruction, two wars, a depression, and years of expedient and make-shift school construction had allowed building needs to reach such staggering proportions that four or five times the money available would have been required to provide a really adequate school plant.

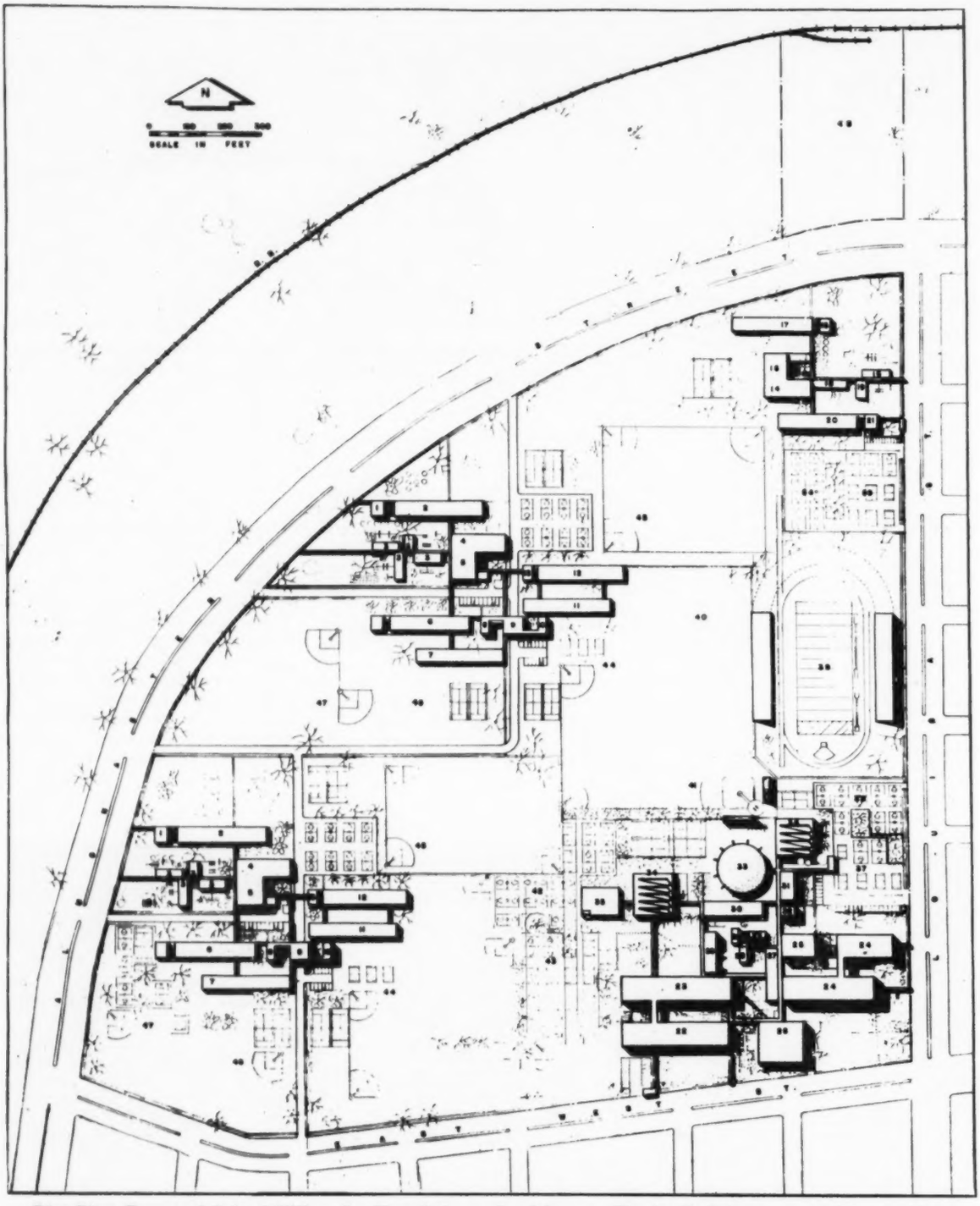
Probing for ways to save money and still provide desirable educational plants, we finally hit upon a plan which we believe may partially solve our problem. It is, so far as we know, a new concept in school planning that may eventually change the entire setup of our large urban school system.

The idea, now under consideration by the school board, is an attempt to solve — for New Orleans — a problem which has retarded the local school building program and has caused school board headaches from coast to coast.

The proposal is to build suburban "school villages." These would consist of several school units, consolidated on the outskirts of the city where large plots of land can be acquired at reasonable cost. They would be patterned, to a certain extent, after universities, most of which have long concentrated their facilities on a single large site.



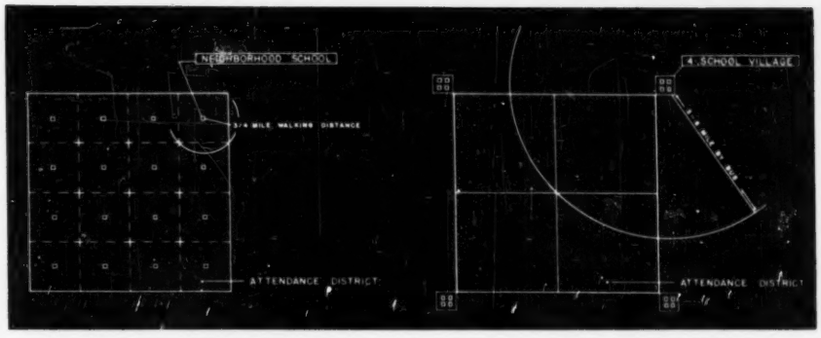
A 90-Acre site in Gentilly is suggested for use as the first New Orleans school village with elementary, junior high, and senior high school units all on one campus.



Plot Plan, Proposed School Village for New Orleans, Louisiana. — Charles R. Colbert, supervising architect and planner, New Orleans Parish Board of Education, New Orleans, La.

1. Administrative Unit
2. First Grade
3. Kindergarten
4. Auditorium
5. Cafeteria
6. Second Grade
7. Third Grade
8. Administrative Unit
9. Central Administration for Three School Unit
10. Administrative Unit
11. Sixth Grade
12. Fourth and Fifth Grades
13. Library
14. Auditorium
15. Library
16. Cafeteria
17. Second and Third Grades
18. First Grade
19. Kindergarten
20. Fourth, Fifth and Sixth Grades
21. Administrative Unit
22. 1500 Student Junior High School
23. 1500 Student Junior High School
24. 2000 Student Senior High School
25. Administrative Unit
26. Cafeteria
27. Home Economics Lecture Rooms and Shops
28. Home Economics Model Homes
29. Science Building
30. Arts and Crafts
31. Central Administration for Three School Unit
32. Multi-Purpose Building
33. Auditorium
34. Gymnasium for Junior High Schools
35. Inclement Weather Play Shelter
36. Gymnasium for Senior High School and Competitive Sports
37. Girls' Play Courts
38. Boys' Play Courts
39. Stadium with Team and Physical Facilities
40. Football and Track Practice Fields
41. Competitive Baseball
42. Boys' Play Area-Junior High School
43. Girls' Play Area-Junior High School
44. Girls' Play Area-Upper Elem. Grades
45. Boys' Play Area-Upper Elem. Grades
46. Girls' Play Area-Lower Elem. Grades
47. Boys' Play Area-Lower Elem. Grades
48. Site for School Board Centralized Services

Children would be transported out of extremely crowded city areas to the villages by school buses. The villages would replace neighborhood schools, yet each neighborhood would have a particular structure for its use in the school village. Congested play yards, Gargantuan multi-story buildings, objectionable odors and sounds, and surrounding canyons of brick would be exchanged for the more informal beauty of the suburban village with its freedom, shade, and atmosphere which each child can appreciate. As the rural consolidated school answered the problem of scattered population densities, so the reverse should alleviate the problem of enormous concentrations economically mandatory in urban centers.



Left: Present Neighborhood Attendance Districts

16 separate small sites.
Child walks to school in 30 minutes.
Expensive real estate.
Inadequate sites.
High tax assessments.
Rigid districts.
$100,000 per acre.
Rapid obsolescence.

Right: Future School Village Attendance Districts

4 large sites.
Child rides to school in 30 minutes.
Low-cost suburban real estate.
Adequate sites.
Low tax assessments.
Flexible districts.
$3,000 per acre.
Long-life usefulness.

Is such an idea practical? The Office of Planning and Construction, after months of consideration, research, and planning, believes it can demonstrate that the school village plan not only is practical but that it is in many instances more desirable than a neighborhood school. Our studies lead us to believe that more and better educational facilities can be provided for much less money. Futhermore, we think that school villages are applicable in many other cities and may ultimately solve a national quandary.

The problem which led to the idea is common to most large cities. Actually, it is a combination of two closely related cases against the neighborhood school in all densely populated urban areas:

1. The inability to purchase adequate school sites in crowded neighborhoods where they are urgently needed except by paying fantastic prices, and

2. The problem of a shifting child population.

Because the heavy child population of a city shifts every few years (at least, that has been the pattern in New Orleans), it is extremely hard to locate a school in a neighborhood where it will be used to capacity throughout its reasonable design life. The Orleans Parish School Board has found that many of its 90 buildings, some of which were constructed only 15 to 20 years ago, are presently very poorly utilized though they are still quite serviceable. The heavy child population of the city has shifted to areas where schools have not been provided, thus creating a demand for new schools. The problem is particularly pronounced in newly developed areas where most residents are young homeowners and are now raising their families. The first thought that comes to mind, of course, is to build schools to fully accommodate these neighborhoods. As homeowners, however, these parents may reasonably be expected to continue occupying their same homes after their children have grown up, married, and moved to some other section to in turn raise their children. If schools are provided to serve these areas adequately on a neighborhood basis for the next ten years, the board can expect to find them lying partly idle within 15 or 20 years just as some of those now existing in older sections of the city.

In New Orleans, the other problem — that of exorbitant land costs, a shortage of certain school facilities, and little playground area — is particularly acute in what we refer to as the "Back-A-Town" Negro area. For us, it is a demanding problem area, containing one third of the city's Negro population and located in the very center of the city.

At present, there are six elementary schools for Negroes in the community, all old and inadequate. Three new schools are under construction to replace dilapidated ones. Of necessity, they are being built where it was impossible to obtain proper playground area.

So overcrowded are facilities that at one school, 2300 students were accommodated last year on a 3.2 acre site, less than two square blocks! Operation of the platoon system, in which one shift of students attends school in the morning and another shift attends in the afternoon, has been a necessity.

That is the situation as it stands. Conditions are expected to become worse. By 1960 our enrollment data shows there will be elementary school capacity for only 4235 children in the area, while the student population will be 8395. This means 49.5 per cent would not be housed. This is a sample citation. Junior high school facilities would be just about as short, and high schools would be only slightly less crowded.

Must this be the case? We believe our idea will enable us to answer this question in the negative and to save the taxpayers of Orleans Parish millions of dollars in site costs as well as the additional savings accruing to them if schools are made to serve to capacity throughout their useful lifetime.

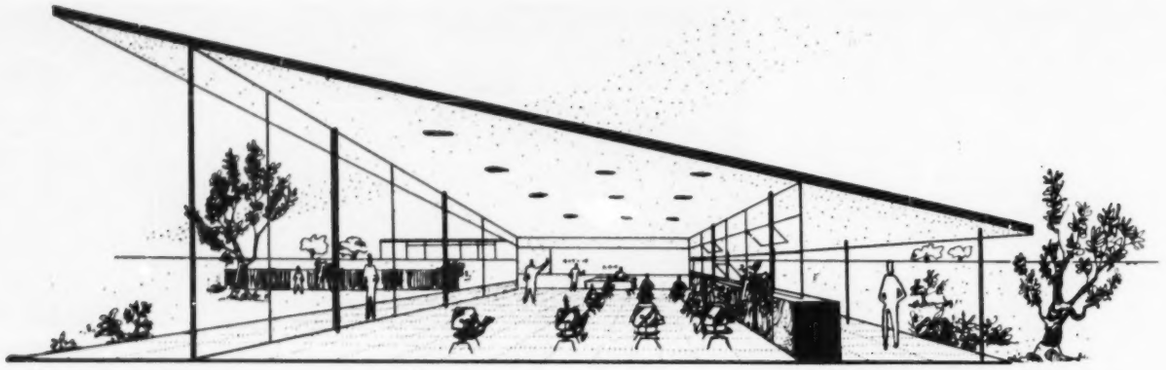
In simple terms, our study showed a need by 1960 for a bare minimum of eight 525-student elementary schools, two 1500-student junior high schools, and one senior high school in the area, a total of 11 buildings.

What we are proposing at the present time is the construction over a period of several years of an experimental or "pilot" educational village for Negroes to contain these facilities. It would cost about $12,000,000 but more would be accomplished than at any time in history toward the equalization of the school system in this "Queen City" of the deep South where segregation has been demanded both by custom and by law.

All of these buildings would be located in Gentilly, a fast-growing suburban district only 20 minutes by bus from the heart of New Orleans, on a 90.2 acre site acquired by the school board for, believe it or not, $300,000 — roughly $6,600 per block or $3,300 per acre. The size of the site is equivalent to 45 city blocks.

Until now, our planning has been based on the accepted concept of the neighborhood school unit built in the area where the students live. But the cost of buying sites and construction of buildings in this area as compared with the cost of suburban property led us to the conviction that a re-evaluation of these widely accepted school planning concepts is a necessity.

Our studies showed that the average cost for land in the problem area would be at



The indoor classrooms would be closely related to the outdoor areas in all the elementary school buildings.

least $99,000 per acre, or about $198,000 per city block. In one instance, $149,000 per acre was paid for a 2.4 acre site for a 1500-student junior high school. In other words the 90 acre site was acquired for less money than was paid for *one* 2.4 acre neighborhood site.

At this rate, the cost of school sites for facilities within the area would be a minimum of $5,700,000 for a less desirable plan calling for seven buildings, or a minimum of $8,000,000 for the desirable plan calling for 11 buildings. Actually these estimates are so conservative they amount to "pipe dreams." A $10,000,000 estimate would probably be more nearly correct. With estimated minimum costs of construction added, the lowest total cost comes to $11,500,000 for the first plan and more than $20,000,000 for the more desirable one.

Office of Planning and Construction surveys indicate that the proposed school village providing the same 11 schools could be constructed for about $12,000,000, quite a saving, when compared with the $20,000,000 cost for these schools if they are built on neighborhood sites.

The problem from there, as we see it, resolves into the question of whether the savings will more than offset the expense of transporting the children to the village.

An extensive study of school bus transportation, based on present-day costs, showed that it would require only $425,000 to transport children from the congested area to the suburban site for the next 17 years. Buses would spend little more than 20 minutes en route. They would pick up children at a central point in each four-block neighborhood. No student would have to walk more than two blocks to board a bus or cross a major thoroughfare to reach a bus collection point. Teachers would ride and supervise the buses at all times.

In essence, we are exchanging a 30-minute walking distance to school for a 10-minute walking distance and a 20-minute bus ride. The full value of the mobile bus classrooms with audio-visual aids and teacher guidance will be developed. By carrying separate grade groups on buses, expanding opportunities for classroom experiences should be achieved. Variable bus routes, for instance, will assist the student in understanding his city and the problems confronting urban populations.

Aside from savings which can be measured in terms of dollars and cents at the present, certain savings in operation of such a consolidated system of schools seem to us obvious. Construction costs could certainly be trimmed. Several schools could use the same lunchroom and other facilities, such as auditorium, manual training shops, and the like. The economies of centralized heating, cooling, telephone, gas, and electric distribution are examples. Maintenance procedures could be made more efficient, and consolidated administration and record facilities are possible. As indicated on the plan, we propose to construct the elementary schools in the village in groups of three, providing each group with common centralized facilities while separating grade groups into small structural and administrative units. Multiple use of assembly halls, kitchen, and other essential elements will thus be possible while maintaining the autonomy of the school and the neighborhood it serves.

A further advantage is that valuable property in the problem area will remain on the tax rolls, and property in the suburbs, presently assessed on an acreage basis, will be interchanged for it. Of even greater significance in New Orleans, we need not destroy large segments of badly needed housing and displace educables to allow construction of "their" school.

Educationally, we believe many added services would be possible at less cost. In the first place, because of the permanent nature of the village, facilities for such special services as sightsaving classes and classes for retarded, physically handicapped, or brilliant children would be more easily justified. The educational program, the intramural program, and the student activity program can be implemented, and testing and guidance facilities may be economically enlarged.

When the child population of the city shifts, we will be required only to change bus routes.

These are the advantages as we foresee them. We are proposing to exchange some of the merits of the neighborhood school for a broader educational and recreational program and the ability to insure adequate future school facilities for our ever floating student population. We are planning schools to be used in conjunction with organized bus transportation instead of using buses to alleviate planning errors of the past.

To us it is reasonable. In this era of rapid transit, of commuting between suburb and city, it seems logical that the schools follow the same pattern and relocate on the periphery of the city. We visualize our proposed school village as a "pilot plant" which may point the way to a less rigid and static pattern for locating school buildings.

It is mobility as opposed to rigidity. And we think it will work.

SCHOOL BUILDING CONTRACTS

During the month of October, 1952, Dodge reported contracts let in 37 Eastern states, for 434 new school buildings, at a total cost of $126,003,000.

A summary of Dodge reports for school building contracts let in 37 states east of the Rocky Mountains, during the first ten months of 1952, indicates that contracts were let for 5794 school buildings, at a cost of $1,208,798,000.

During the month of November, 1952, contracts were let in 11 Pacific Coast states for 14 new school buildings, at an estimated cost of $3,132,529.

Forty-one additional school building projects were reported in preliminary stages, to cost an estimated $16,353,000.

Originally planned as a two-story structure, Kalamazoo's South Junior High School was redesigned as a single-level building with resulting economies of nearly $800,000 in construction costs and a saving of 900,000 cubic feet of space. — Louis Kingscott and Associates, Architects, Kalamazoo, Michigan.

On Single Level —

Kalamazoo Builds for Community Service

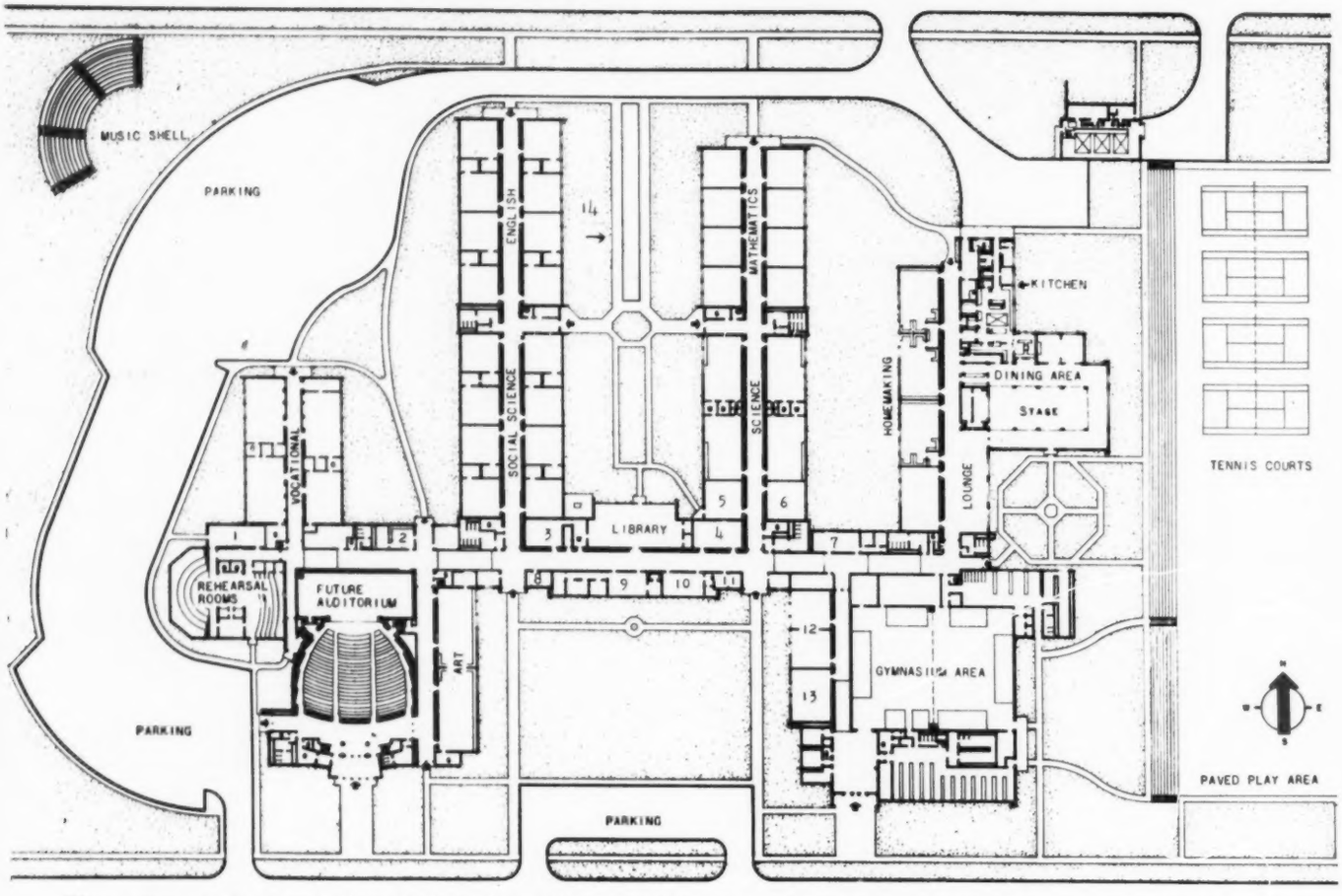
*Dr. Loy Norrix**

Combining architectural grace and modern-day function, the new South Junior High School in Kalamazoo, Mich., was conceived for the express purpose of alleviating quickly and economically an acute city-wide classroom shortage, and providing adequately for instruction in junior high school grades.

Described as one of the nation's finest school plants, this sweeping structure of steel, glass block, and concrete represents a step toward the completion of a five-year pay-as-you-go plan for the expansion and modernization of Kalamazoo schools. Into its 43 classrooms have come one thousand junior high school pupils from two old converted elementary schools which were seriously overcrowded because of swelling enrollments in the primary grades.

*Superintendent of Schools, Kalamazoo, Mich.

There's plenty of space in the large square classrooms which were designed and equipped for better group instruction and supervision. Manually controlled ventilators in the clerestory windows assure good cross ventilation. →



Floor plan of the South Side Junior High School in Kalamazoo shows the unusual arrangement of wings to take advantage of a terraced slope and to separate classrooms from vocational and athletic areas. The lower level (to the east of the building) will be used for a football field and future stadium seating. Unidentified rooms on the plan are closets, toilets, storage, conference, and work rooms.

Key:
1. Music Storage
2. Bookstore
3. Visual Aid
4. Projection Room
5. Handicapped
6. Language Room
7. Health Offices
8. Male Teachers' Lounge
9. Offices
10. Community Room
11. Women Teachers' Lounge
12. Health Classrooms
13. Typing
14. Bicycle Shelter

The opening of this modern school has also unified the junior high school system of the city and instilled a fresh vigorous school spirit in a large segment of Kalamazoo's school population. An additional benefit is the separation of sharply defined age groups, an advantage both to pupils and teachers.

Originally designed as a two-story building, the South Junior High School was replanned as a single level structure to effect a saving of nearly $800,000. The construction cost of the present building totaled $2,447,041.46, or 72.3 cents per cubic foot. Its over-all length is 700 feet, the width 500 feet.

Glass block panels in the gymnasium reduce maintenance expenses because of their resistance to normal breakage and the ease with which they can be cleaned. A folding partition can be used to divide the gymnasium for simultaneous use by boys and girls. Folding bleachers are available for spectator sports. →

The library walls, equipment, and floors are finished in light tones to obtain maximum reflectivity from the light-directing glass block panels and clerestory. Ceilings of white acoustic tile are unpainted and help to distribute daylight evenly to all portions of the room.

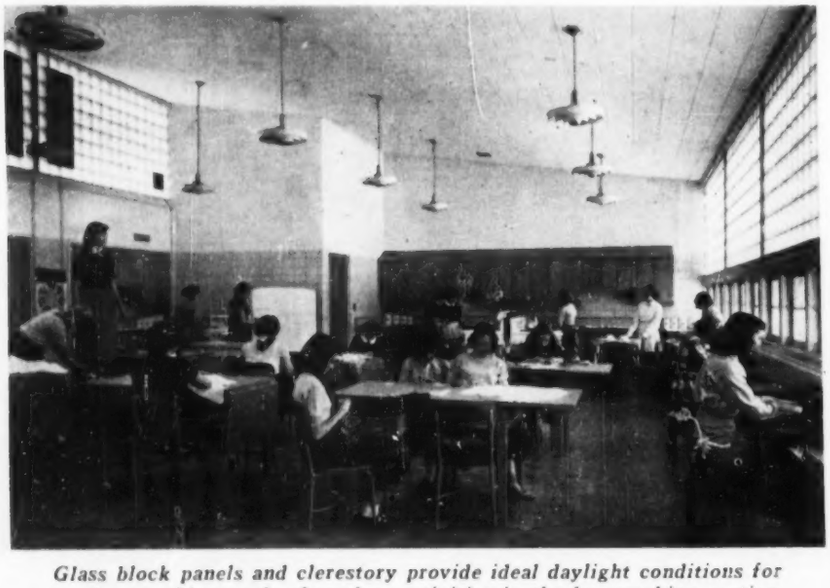
The music rooms of South Junior High School are terraced for instrumental and choral rehearsals. Glass block panels over clear vision window strips flood the rooms with daylight.

The manual training shops are located in a wing where the noise will not disturb the academic classrooms. Cheerfully daylighted, the shops are equipped with modern machinery and tools.

In redesigning the plans, the architects — Louis Kingscott and Associates, Kalamazoo — chalked up a saving of 900,000 cubic feet by eliminating stair wells and considerable corridor space and by condensing various areas. The switch to a single level building also permitted the use of lighter and less expensive steel framing. Other economies resulted from the architects' choice of concrete-slab-on-ground construction, eliminating the cost of a basement; ramps in lieu of stairs to connect various floor levels on the terraced site; and from the use of dry-wall construction throughout the building.

Campus-like in atmosphere, the 22-acre site is located in a residential area safe from heavy street traffic. It offers tennis courts, football and softball fields. Bicycle racks are located conveniently between two main classroom wings. There are excellent parking facilities for school-hour and evening activities.

An outstanding feature of this multiwinged building is the window system which combines light-directing glass block and clear glass sash teamed with clerestory panels of the same type of glass block to provide the ultimate in classroom daylighting. The clerestory panels are installed above door level on the corridor sides of the rooms. Manually operated ventilators in clerestory provide for good cross ventilation.



Glass block panels and clerestory provide ideal daylight conditions for sewing, cooking, and other class activities in the homemaking section.

The color scheme in the classrooms and corridors provides a good seeing environment. Cinder block partitions, finished in glazed tile only to wainscot height, are painted in light pastel colors to obtain maximum light reflectivity. Surfaces of desks, furniture, equipment, and floors are also finished in light tones. Ceilings of white acoustical tile are unpainted.

The arrangement of classrooms has been planned with careful precision to facilitate corridor traffic flow and to segregate those classes and activities that create disturbing noises and odors. Most of the classrooms for academic subjects are contained in two parallel wings and have separate street entrances. Other classroom doors lead directly to the bicycle racks in the court.

Twenty-eight of the classrooms in these wings are sectionalized into English, mathematics, science, and social science departments. From these areas, pupils can fan out easily into two other wings containing graphic arts, manual training, homemaking rooms, and the gymnasium.

All regular classrooms are square in shape, providing for better group instruction and supervision and for better audibility.

The cafeteria offers a dining space of 400, a comfortable lounge with check lockers for textbooks, a teachers' private dining room, and a 30-foot stage.

(Concluded on page 88)

Modern and Beautiful —

THE SOUTH ST. PAUL JUNIOR HIGH SCHOOL

*Irvin T. Simley**

The school is widely used at night for community gatherings, class work, and recreation.

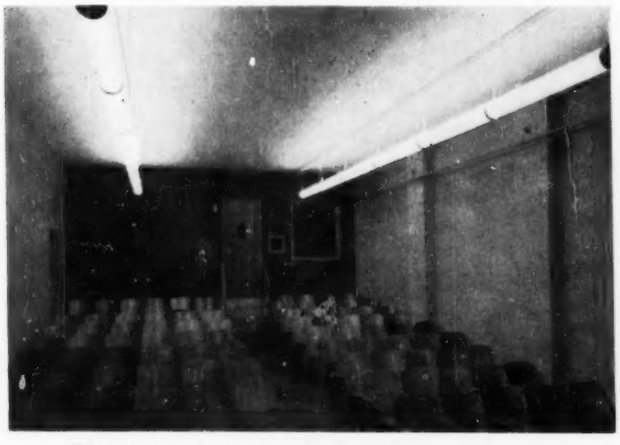
The new Junior High School in South St. Paul, Minn., has been designated by many who have seen it as one of the very finest in the state or even in the Northwest. Except for the gymnasium-cafeteria-community rooms section which was not ready for occupancy until the early part of 1952, the school moved into the building in the fall of 1951.

This new unit of the South St. Paul school system is an important part of the school expansion and improvement program that came about as a result of the consistent and rapid population growth of the city and the interest and desire on the part of the citizenry to maintain and continue to provide the finest and best in educational opportunity for its people. Facilities, arrangements, and accommodations of the building were based on a carefully predetermined educational and service program in which teachers and interested citizens as well as the board of education had large say.

After the board of education had agreed after much study, upon the educational program to be offered the boys and girls of junior high age and had agreed, too, upon the type of facilities to be provided to meet certain general community needs, the total educational and service program thus established was turned over to our architects, Toltz, King and Day, Inc., of St. Paul, who translated our wishes into building and facilities' possibilities. With preliminary plans agreed upon and cost estimates determined, the board of education through its representatives brought its message and information to the people at meetings of not less than 40 organizations and groups, through a series of 19 consecutive short daily press releases in question-and-answer form published in the local South St. Paul *Daily Reporter*, and finally through a house to house distribution of a brief attractive brochure and other printed information. The people responded favorably to a bond election for $1,725,000 on March 22, 1949. A large part of this money was to be allocated to the Junior High building.

The present pupil capacity of the building is 900. The cost including furniture, equipment, and architects' fees, but excluding site, has been approximately $1,200,000. It took a little better than a year and a half to build.

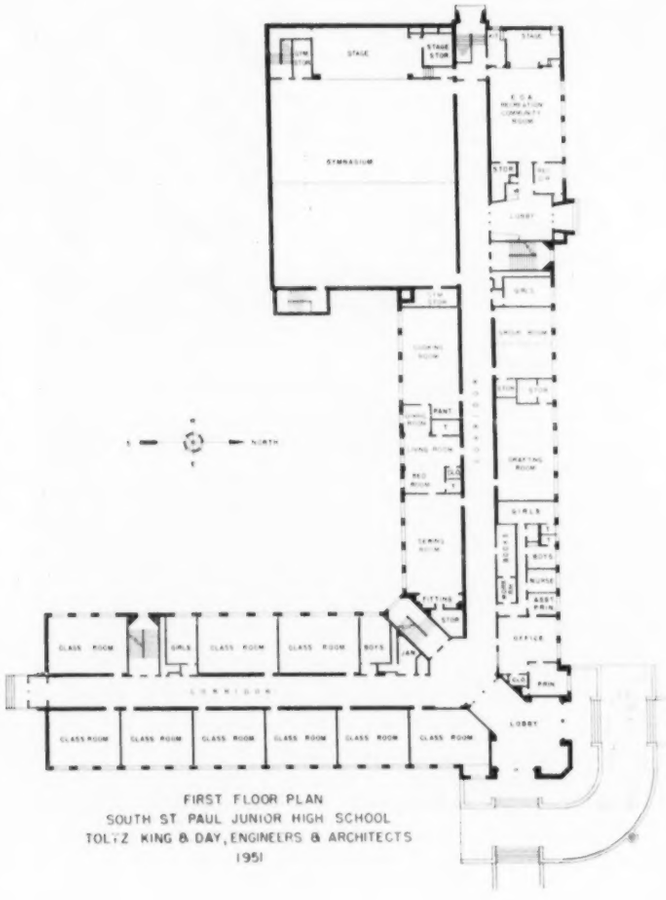
*Superintendent of Schools, South St. Paul, Minn.



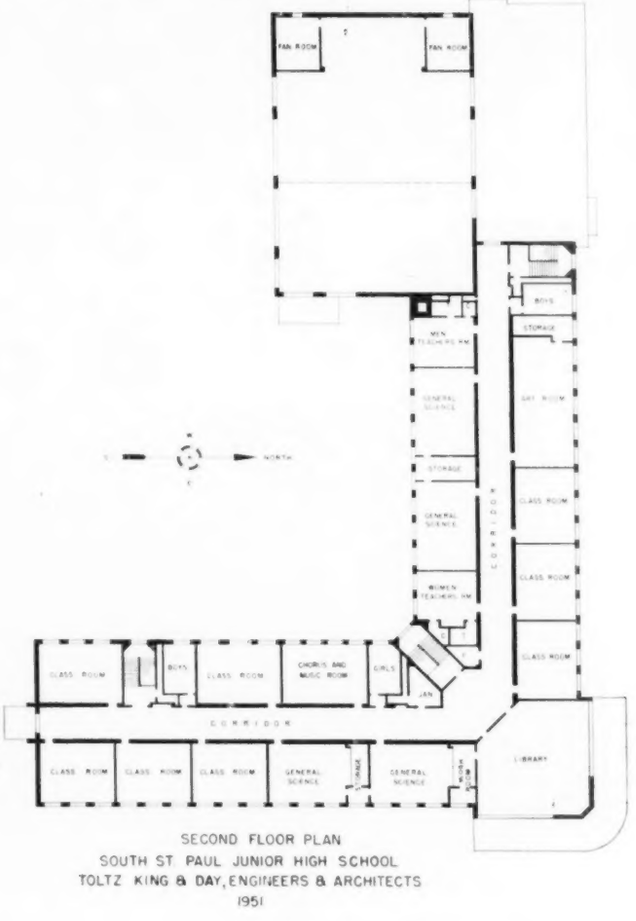
The visual education room doubles as a theater for class dramatics.

The typical classroom is furnished with modern movable seating, chalkboards, tackboards, and storage space for teaching materials.

The library is the popular study center for the academic classrooms.

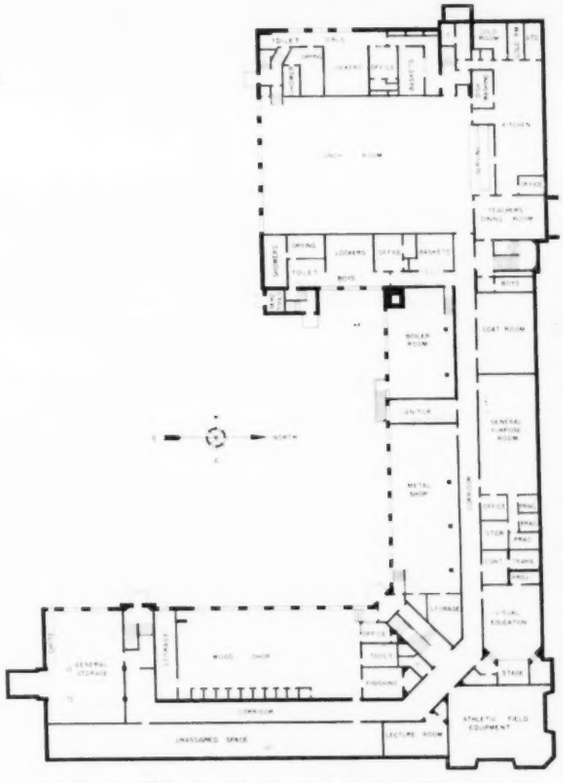


FIRST FLOOR PLAN
SOUTH ST. PAUL JUNIOR HIGH SCHOOL
TOLTZ KING & DAY, ENGINEERS & ARCHITECTS
1951



SECOND FLOOR PLAN
SOUTH ST. PAUL JUNIOR HIGH SCHOOL
TOLTZ KING & DAY, ENGINEERS & ARCHITECTS
1951

Front View showing main entrance, South St. Paul Junior High School, South St. Paul, Minnesota. Toltz, King & Day, Inc., Architects, St. Paul, Minnesota.



Basement Plan, South St. Paul Junior High School, South St. Paul, Minnesota.

Main entrance.

The woodworking shop is spacious. Doors to project lockers at right.

It was dedicated on January 17, 1952, and officially accepted by the board on June 11, 1952.

The building is in the form of a huge letter "J" with the stub of the "J" housing the gymnasium — which may also be used as an auditorium, seating approximately 1150 — the cafeteria on the floor below the gymnasium, capacity a comfortable 450, and the main community room with accessory accommodations. If and when necessary the building is readily expansible in two directions. It is located on a site of a little more than 10 acres in the central part of the city. The site had a shallow ravine running into it so that by grading the building could be made three full stories high on the off-street sides while only two stories high on the street sides. The area behind the building could thus be developed into fields for playgrounds, physical education, and athletic play readily accessible from dressing rooms, gymnasium, shops, and storage areas. The main entrance on the corner is a massive and architecturally beautiful structure of cut stone. The second floor over the entrance houses the library.

General Features

Construction is of brick and reinforced concrete. The building is fire resistive. Interior doors and trim are of blond finished oak. There is oil heat, fluorescent lighting, built-in pupils' lockers, unit ventilators, aluminum windows, acoustically treated ceilings, ceramic tile dadoes in corridors and toilets, wall-hung toilet stools and urinals, a two-way public-address system, and commodious storage rooms.

The floors of various areas are of finish to suit wear and usage. Main corridors, all stairs, and toilets are of terrazzo. Classrooms and gymnasium have maple. Ground floor corridor, cafeteria, teachers' lunchroom, and other finished areas on ground floor have asphalt tile. So do the teachers' lounges, the foods classroom laboratory, and the administrative office suite. The library has linoleum tile. Shops have edge-grained fir planking except for special areas which are of concrete. Dressing rooms, shower and locker rooms, girls' and boys' basket rooms, the public coat checking room, and storage rooms, are of concrete. The long "unassigned" room, to be used for early spring athletic training, has an earth floor.

Each classroom has a teacher's closet and adequate shelving and storage space for supplies, materials, and special equipment. A feature is the deep vertically sloping rack for magazines and paper bound booklets. Special rooms such as for art, drafting, and science have special adjoining workrooms with water, sink, work counter, and cupboards. The four science rooms have stepped-up or raised seating.

Furniture throughout is new and of most up-to-date type.

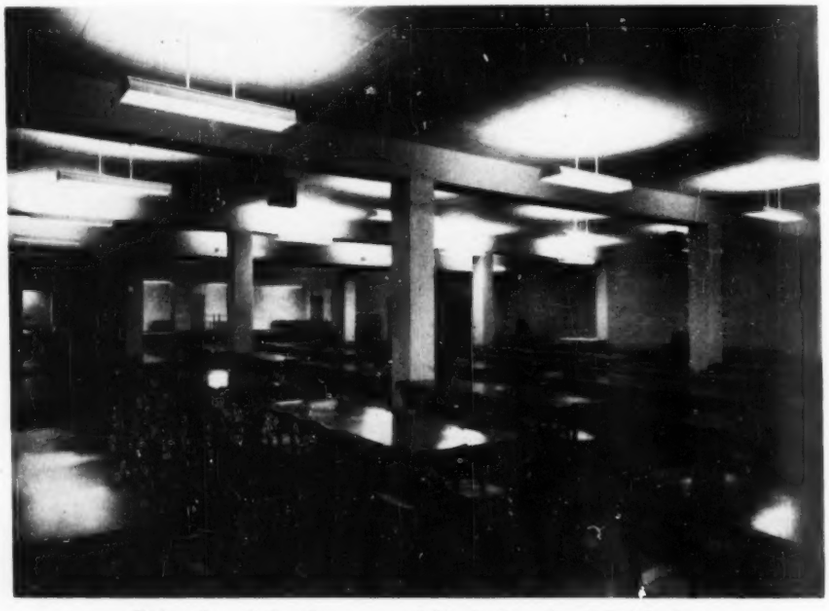
Special Features

The building does, of course, contain all the conventional classrooms and accommodations needed for carrying on a modern junior high school educational program. But it has more than that. It has certain unusual or special features, some which are worthy of mention:

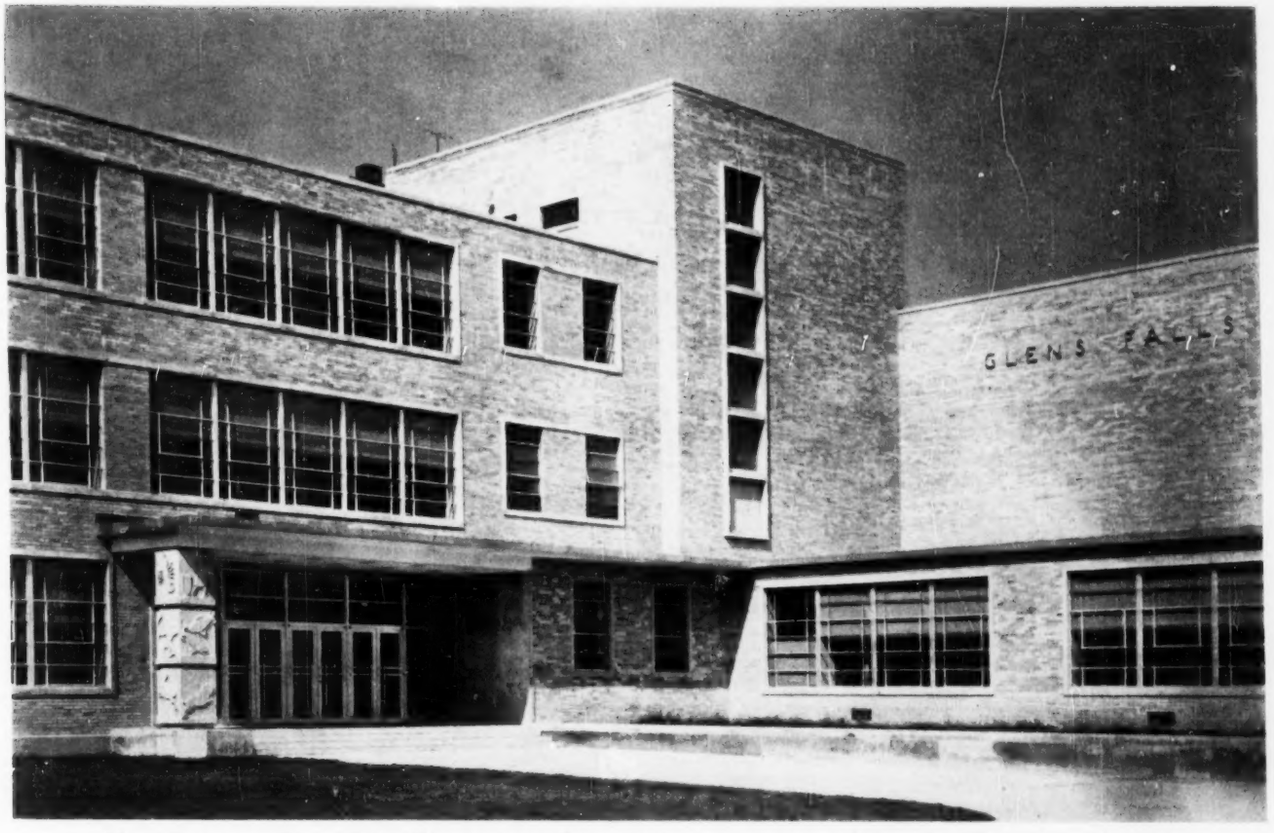
Accommodations for Community Use. In the stub end of the "J" and directly across the corridor from the gymnasium is a beautifully finished all-purpose room, 28 by 41 ft. 6 in., which aside from many school and recreation uses, was planned especially to be used by various community groups and for community purposes. It has a small stage with an attractive stage curtain. It also has a small kitchenette so light refreshments may be served. Then there is a commodious storeroom. The office of the recreation director adjoins. It can seat up to 200 people on folding chairs. Located just off the lobby of the main entrance to the gymnasium, the room can be shut off from the rest of the building by built-in folding gates in the corridors. Similar gates on all floors are arranged to limit occupancy to such areas of this section of the building as might be desired. Use thus far has ranged from wedding receptions to flower shows. The Golden Age group of the Recreation Department meets there regularly each Tuesday afternoon.

The cafeteria is beautifully finished with an acoustical ceiling and a colorful asphalt tile floor and is equipped with folding tables and

(Concluded on page 91)



The cafeteria has been especially designed and finished to provide reasonable quiet.



Main Entrance, Glens Falls High School, Glens Falls, New York. — Marcus T. Reynolds, Architect, Albany, New York and Ralph H. Parks, Associate, Glens Falls.

Helpful and Constructive Is—

THE GLENS FALLS STORY

*Helen S. Gahimer**

A dynamic educational and publicity campaign, plus outstanding community co-operation, made possible the new Glens Falls, N. Y., senior high school building which was opened for instruction the fall of 1952.

The new structure is the result of 10 years' study by the board of education and two years' joint planning by the board, the architects, the teachers, and interested civic groups to ensure efficiency, comfort, and beauty as well as economy. Foremost in their minds was the twofold purpose of the new building: to provide the proper facilities and space to give every boy and girl a broad education and to provide a much needed cultural and civic center for the community.

The building stands today as one of the most efficient, economical, and aesthetically pleasing school plants in the state of New York, but three years ago it existed only as an architect's perspective drawing and a set of plans and specifications. It remained to ask the public, in the face of mounting taxes, to approve the necessary $2,125,000 bond issue.

*Business Teacher, Glens Falls Senior High School, Glens Falls, N. Y.

Preliminary Planning

Any board of education today is aware that it can secure "publicity" by merely announcing proposed school construction costs totaling several million dollars. What was needed in Glens Falls was a plan for an "educational" campaign to present to the voters the benefits and opportunities offered by the new school. This was provided through the generosity of a large business firm which made available to the board the services of its advertising manager. Under the slogan "It Is Later Than You Think," this public relations expert outlined a six-weeks' campaign[1] and designed a 16-page beautifully printed brochure which told the Glens Falls story with facts, figures, plans, pictures, and cartoons.

Superintendent Alexander W. Miller acted as co-ordinator of the campaign and prepared a vitally important mimeographed pamphlet that presented complete statistical and factual proof of the need for

[1]A copy of the campaign outline by Harry G. Helm, advertising manager of the Glens Falls Insurance Company, may be obtained from the National Citizens' Commission for Public Schools, 2 West 45th Street, New York, N. Y.

the building, together with financial reports. This pamphlet was the source of essential information for the campaign workers and its contribution to the success of the project cannot be overemphasized.

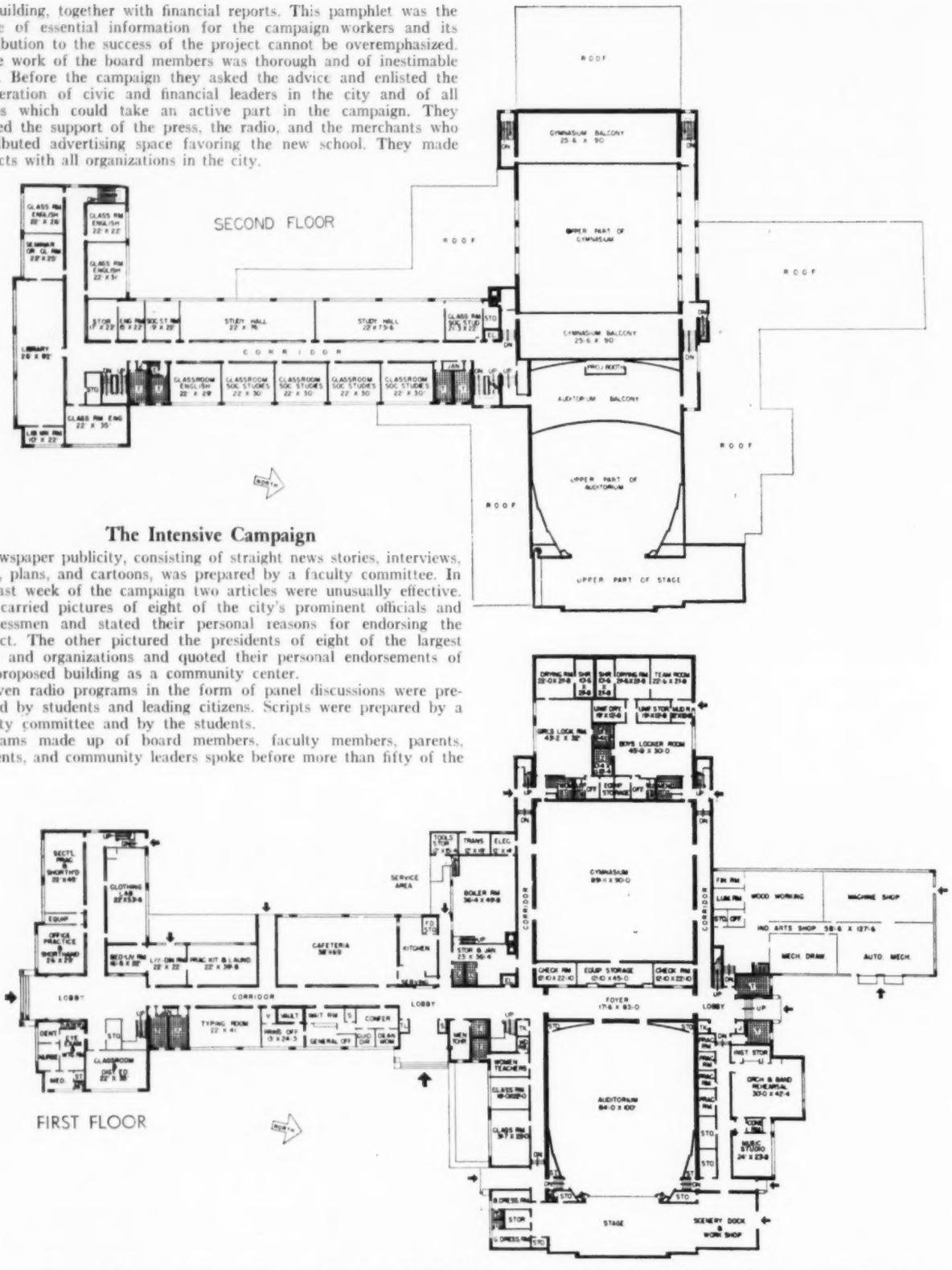
The work of the board members was thorough and of inestimable value. Before the campaign they asked the advice and enlisted the co-operation of civic and financial leaders in the city and of all groups which could take an active part in the campaign. They secured the support of the press, the radio, and the merchants who contributed advertising space favoring the new school. They made contacts with all organizations in the city.

The Intensive Campaign

Newspaper publicity, consisting of straight news stories, interviews, maps, plans, and cartoons, was prepared by a faculty committee. In the last week of the campaign two articles were unusually effective. One carried pictures of eight of the city's prominent officials and businessmen and stated their personal reasons for endorsing the project. The other pictured the presidents of eight of the largest clubs and organizations and quoted their personal endorsements of the proposed building as a community center.

Seven radio programs in the form of panel discussions were presented by students and leading citizens. Scripts were prepared by a faculty committee and by the students.

Teams made up of board members, faculty members, parents, students, and community leaders spoke before more than fifty of the



First and Second Floor Plans, Glens Falls High School, Glens Falls, New York. — Marcus T. Reynolds, Architect, Albany, New York, and Ralph H. Parks, Associate, Glens Falls, New York.

The auditorium as seen from the balcony is a dignified, harmoniously finished room.

The gymnasium is provided with permanent bleachers over the showers and dressing rooms. Folding seating is used for interscholastic games.

The homemaking room serves both for class purposes and small social gatherings.

city's organizations. Their effectiveness was increased by the variety of personalities on each team, their willingness to answer questions, and their active membership in the organizations before which they appeared. Two large perspective drawings of the new school and mounted plans accompanied the speakers on each trip.

School functions and workers' meetings were enlivened by humorous skits written by faculty members. School made posters were put on display in the schools and downtown store windows. And as a climax to the campaign, members of the PTA distributed more than 6000 copies of the brochure to homes of voters and talked briefly with the potential voters. Transportation on election day was furnished by a committee of PTA members, and despite one of the worst snowstorms of the year, the voters turned out to register their emphatic approval of the bonds and the new school by an overwhelming 18 to 1 vote.

A Truly Functional School

In September, 1952, the architects' drawings had become a reality and at the Open House a large segment of the voters registered their unqualified approval of the way the money had been spent.

The Glens Falls Senior High School stands as a tribute to the foresight, research, and careful planning of the architects, the school personnel, and interested civic groups. It provides a high degree of flexibility, an opportunity for expansion, and an efficient educational and cultural environment which meets the exacting demands of contemporary education and of the community.

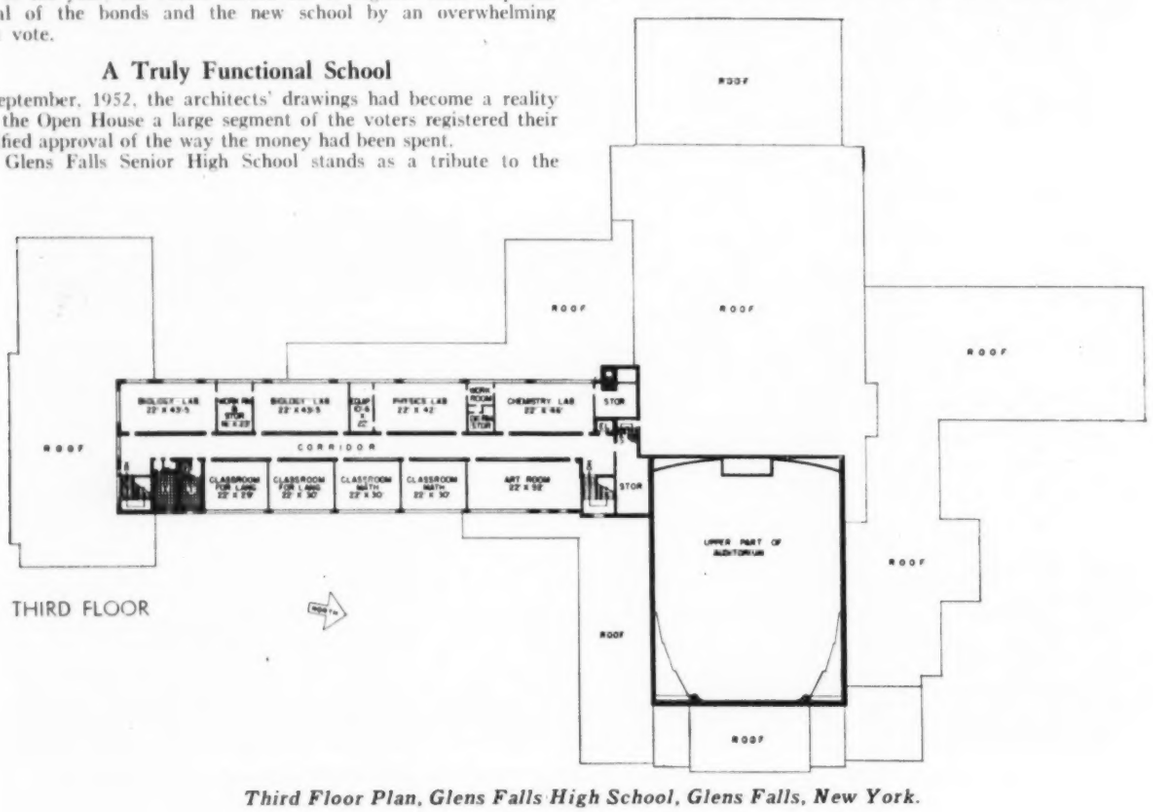
The school is a Class-A fire resistant steel frame building faced with cream-colored textured brick. The main entrances are made interesting by double sets of plate glass doors and limestone pillars ornamented with signs of the zodiac. The use of architecturally projected aluminum windows, and a satisfying relation between wall, window, and door areas contribute to its handsome appearance. Throughout the school a pleasing contrast and variety in texture, line, space, and color are evident.

The building will accommodate 800 students in grades 10, 11, and 12, a 60 per cent increase over its present enrollment. The west end of the south wing is arranged for an extension when needed.

The wing to the right of the main entrance houses a community auditorium and a one-story section for dramatics and speech classrooms and dressing rooms. Directly behind the auditorium is the community gymnasium and a one-story music section and shop wing. The gymnasium and auditorium act as a buffer between the shop and music sections and the academic rooms. The arrangement makes possible maximum joint use of the lobbies, foyer, stairways, check rooms, and rest rooms. Grillwork gates across corridors make it possible to isolate this north wing.

To the left of the main entrance is the academic unit consisting of a three-story portion and a two-story south wing. This multiple-story plan contributes to economy of construction, heating, and maintenance — all advisable in a cold northern climate. The first floor contains the heating plant, cafeteria, teachers' rooms, offices, homemaking department, medical unit, and business education department. The second floor provides for the auditorium and gymnasium balconies, two large study halls, and the English and social studies classrooms conveniently grouped to share the large 100-seat library.

The third floor brings together in one area the biology, chemistry, and physics laboratories. The large space given to these rooms ensures that pupils will have sufficient opportunity to do individual work and provides for future expansion. Across the hall are the language and mathematics classrooms and the spacious art room.



Third Floor Plan, Glens Falls High School, Glens Falls, New York.

The beautifully furnished library is a show spot.

Efficient Layouts

The academic classrooms have been planned for comfort, beauty, and educational efficiency. Walls are painted pastel green, blue, yellow, gray, or rose according to the exposure. Floors are faced with easily cleaned black and beige marbelized asphalt tile. Movable light maple desks, chairs, and conference tables permit a variety of room seating arrangements. There are convenient outlets in each room for the use of movies, filmstrip, phonograph, and tape recorder. A complete set of audio-visual equipment is stored on each floor, and several rooms are equipped with dark curtains for showing movies.

Ventilation and heating are automatically controlled by the room thermostats. Rooms have heavy beige shades, fluorescent lighting, office telephone, public-address unit, cork bulletin boards, storage cupboards, and bookshelves. Green glass chalkboards, hinged multiple-leaved boards, sliding blackboards, and whiteboards serve the needs of the various departments. Recessed metal picture moldings are provided in the walls for hanging the school's collection of pictures in any art media.

The acoustical treatment and color of walls and ceilings, placement and type of windows and lighting equipment, the color and type of furniture and chalkboards, were all designed to promote the physical well-being of the students.

The five-room office suite is centrally located. In the general office are the switchboards for the interroom telephones and the public-address system. Programs can originate from the music room, auditorium, gymnasium, tape recorder, phonograph, the two radio stations with AM and FM, or from the office microphone. Pale gray walls, green carpets, blond-wood and yellow-leather furniture make this suite attractive to the personnel, the students, faculty, and visitors.

Corridors, sunny with buff matt-glazed tile wainscoting and warm yellow walls and ceilings, are equipped with clocks, public-address boxes, recessed drinking fountains, lockers, and lighted recessed display cabinets. Downstairs corridor and lobby floors are terrazzo, upstairs they are rubber tile.

The library is attractive with soft blue walls, tan marbelized linoleum floor, light finish birch adjustable shelving and maple furniture. The seminar room houses the periodicals and is soundproofed as a listening room.

The shop wing, factory-like in construction, with 7400 square feet of space, is equipped with movable metal partitions which can be adjusted without structural changes to provide for changing needs in the shop program. At present the area serves the machine shop; architectural and mechanical drawing class; an automobile repair shop with a power lift and two wide doors to admit cars; and a woodshop complete with dustproof finishing room.

For School and Community

The hardwood playing court of the gymnasium is 84 by 50 feet. The 90 feet square area can be split into two practice courts or divided by a curtain so that two classes may be conducted simultaneously. Facilities include recessed drinking fountains; wire outlets for a loud-speaker system and audio-visual apparatus; a dual lighting system for both sports and social activities; an electric scoreboard; and seating accommodations for 2000, about equally divided between folding bleachers and fixed bleacher seats.

A Civic Auditorium

The well-ventilated community auditorium is a completely equipped, superbly appointed, modern theater. Acoustics are excellent and the 1500 comfortably upholstered seats, 378 of them in the balcony, are mounted on sloping dished surfaces for full visibility of the stage.

ADDITIONAL CONSTRUCTION DATA

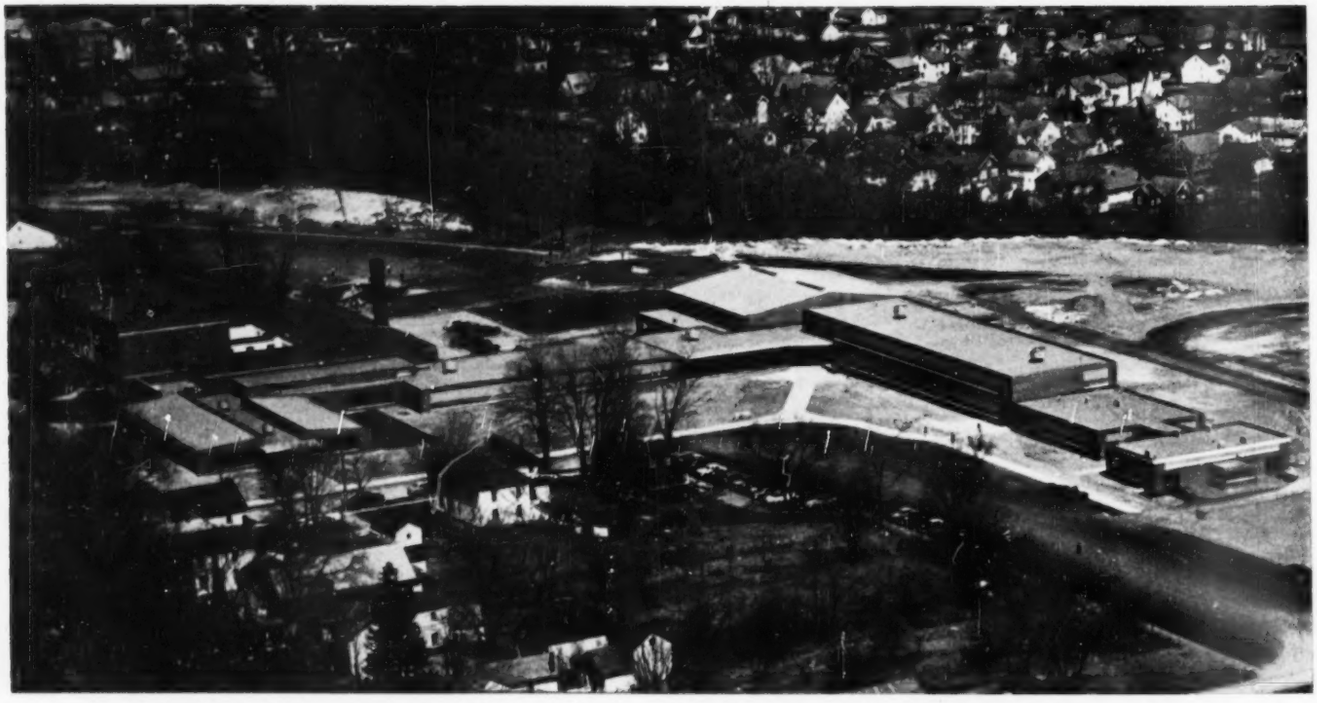
Building cubage: 2,050,000 cu. ft. Area of floor space: 124,057 sq. ft. Area of roof — nearly 2 acres. Cost of original contracts per cu. ft.: 83 cents. Ground broken May 1, 1950; occupancy September 3, 1952.

Reinforced concrete pan suspended first floor construction. Auditorium, gymnasium, shop, and locker room areas: concrete slab on fill. Second and third floor framing: open-web steel joists with 2½-in. reinforced concrete slab. Roof: steel framing with precast reinforced lightweight concrete slab roof deck and built-up slag surfaced roof with copper flashing. Cinder concrete block back-up for exterior walls and interior partitions generally; left unplastered above tile wainscot for gymnasium and lavatories, and for walls of shop, music, stage, storage, and science rooms for economical and/or acoustical properties. Acoustical plaster on walls; acoustical tile or plaster on ceilings. Lighting: fluorescent louvered fixtures placed at right angles to the window areas and recessed in halls. Exterior and service lighting — incandescent. Gymnasium lighting — combination of fluorescent and incandescent. Special cove lighting in foyer.

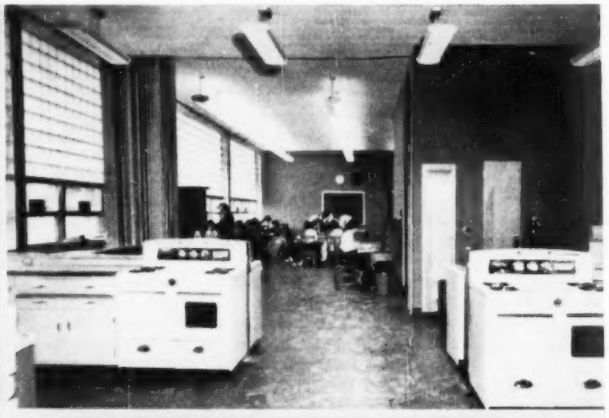
DETAILS OF FINANCING

Total expenditures — $2,157,537.26. Land purchased outside of bond money during the past 20 years — $67,800. General construction $1,362,146.24. Heating and ventilating, $185,556.30. Plumbing, $65,255.36. Electrical, $161,700.50. Elevator, $13,328. Architects, equipment, and landscape fees, $114,433.30. Construction supervisor for board of education, $19,500. Legal services, $2,131.20. Insurance, $20,793.62. Additional land, $11,536.05. Miscellaneous, $3,397.19. Equipment contracts, $197,759.50.

Total receipts — $2,137,820. Bond sale, $2,125,000. Premiums, $8,270. Sale of houses, $4,550. The deficit of $19,717.26 is cared for in the present budget. During construction, the board purchased government notes in the amount of $1,750,000 from proceeds of bond sale, portions of which were sold from time to time as needed, and which will net, with interest and appreciation, approximately $28,000. However, according to the State Education Law, this money must be used to pay the interest on the bond issue.



Air View, New Hartford Central School, New Hartford, New York. — Bice and Baird, Architects, Utica, New York. the building is divided for use by small and older children. The garage and bus service building at right. (All



Upper left: the manual arts shop is used by both boys and girls. Upper right: the home economics workshop is divided into two sections, a foods laboratory and a sewing room. Lower left: the shop unit. Lower right: corridor in the main academic unit.

The playground to the rear of
photos by Dante Tranquille.)

Kindergarten Through High School —

New Hartford Builds a New School

*Ralph W. Perry**

The average supervising principal must be an able administrator, a good disciplinarian, a responsible leader, and a tactful person, but few principals have any flair for writing interesting articles. The author offers this plain description of the events connected with the erection of the New Hartford Central School with the foregoing facts in mind.

New Hartford is a suburban village of 2000, situated just west of Utica, N. Y. It has two small industrial plants with 100 employees and a short "Main Street" with gas stations, drug and grocery stores, barber shops, and a bank. The majority of the citizens are professional people: doctors, dentists, lawyers, and businessmen who have their offices or stores in Utica. This kind of community accounts in large part for the high percentage (50 per cent) of high school graduates who go on to college.

The New Hartford school centralization was effected in 1946, bringing together the Union Free School District of New Hartford and several smaller neighboring districts which had hitherto contracted with New Hartford for the education of their children. The pupil population of the new central district at that time was 1200 and the building facilities consisted of two one-room rural schools, a large elementary school (built in 1901 with an addition in 1920, having a pupil capacity of 500), and a junior-senior high school (erected in 1936, with a pupil capacity of 600). All buildings were located on good sites except the large elementary school, which was built at the junction of two main streets with no room for expansion, no play areas, and no suitable zones for loading or unloading buses.

With the advent of centralization and the return of the GI's after World War II, the pupil population rose rapidly and the board of education faced a serious problem. The old elementary school was not large enough; there was no room for additions, and the traffic hazard was so serious that it was miraculous that no one was seriously injured or killed. The only solution of the problem was the erection of a new school. After consulting with the Buildings and Grounds Division of the New York State Department of Education and Architect J. Kenneth Baird, the taxpayers selected a site adjacent to the high school and purchased the land for $80,000. The board then sought the help of the citizens of the district in planning the new school.

Committees composed of parents, teachers, and high school students were selected and volunteered to work in various areas. No one's offer of help was rejected. Nineteen committees thus considered the needs of the school program, such as kindergarten, transportation, home economics, music, art, science, and the like. Every phase of the school's activity from cafeteria to administration had its committee, usually headed by a teacher because of his background and experience. Most of the committee meetings were attended by the architect, who thereby learned exactly what was needed and wanted and, in addition, caught the atmosphere of interested enthusiasm which these groups developed and passed on to the citizenry.

With the exact specifications prepared by these committees and in the contagious atmosphere of wanting the best educational facilities, the architect designed a building to fit the needs and desires of the community. But the cost was to be one and three-quarter million dollars! Would the taxpayers vote for it! The board exhibited the preliminary plans to the committees, the PTA, the student body, and many other groups in the district. A

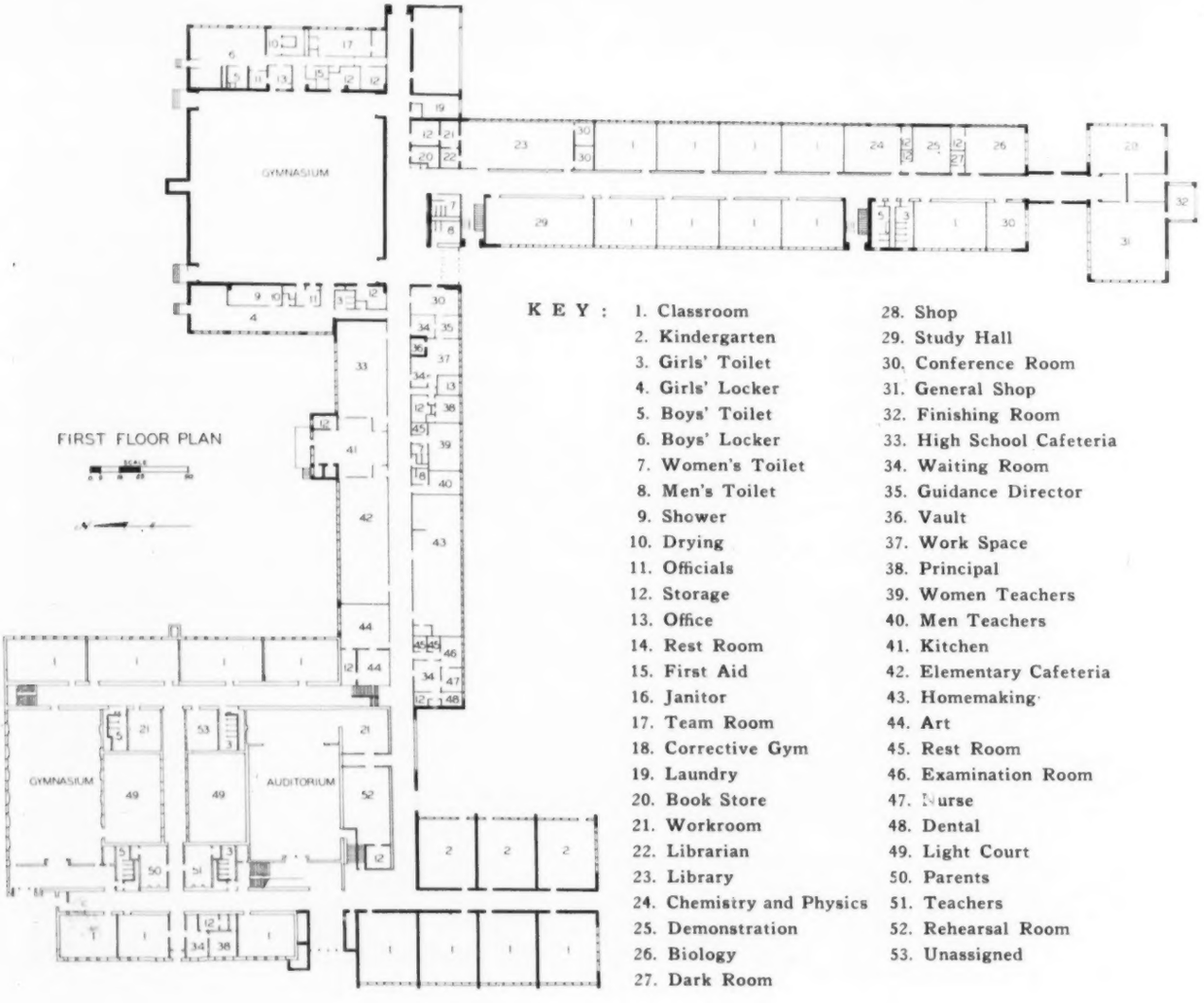
All classrooms are lighted, furnished and finished like the study hall.

*Supervising Principal, Central School, New Hartford, N. Y.

The music room is completely sound proof.

Dr. Ralph Perry
Supervising Principal,
New Hartford Central School.

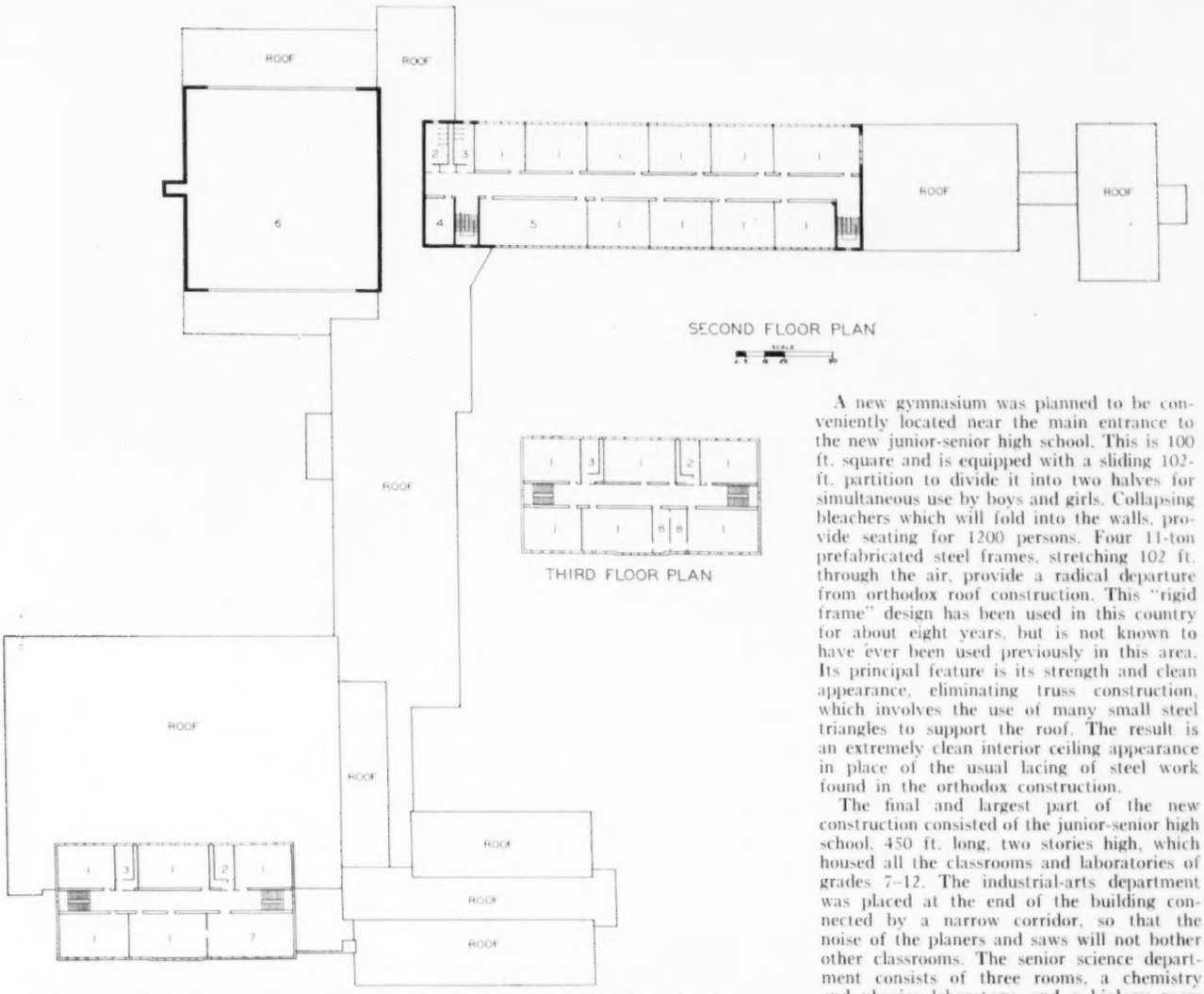
A single kitchen serves the two cafeterias.



FIRST FLOOR PLAN

KEY:

1. Classroom
2. Kindergarten
3. Girls' Toilet
4. Girls' Locker
5. Boys' Toilet
6. Boys' Locker
7. Women's Toilet
8. Men's Toilet
9. Shower
10. Drying
11. Officials
12. Storage
13. Office
14. Rest Room
15. First Aid
16. Janitor
17. Team Room
18. Corrective Gym
19. Laundry
20. Book Store
21. Workroom
22. Librarian
23. Library
24. Chemistry and Physics
25. Demonstration
26. Biology
27. Dark Room
28. Shop
29. Study Hall
30. Conference Room
31. General Shop
32. Finishing Room
33. High School Cafeteria
34. Waiting Room
35. Guidance Director
36. Vault
37. Work Space
38. Principal
39. Women Teachers
40. Men Teachers
41. Kitchen
42. Elementary Cafeteria
43. Homemaking
44. Art
45. Rest Room
46. Examination Room
47. Nurse
48. Dental
49. Light Court
50. Parents
51. Teachers
52. Rehearsal Room
53. Unassigned



Second and Third Floor Plans, New Hartford Central School, New Hartford, New York. — Bice and Baird, Architects, Utica, New York.

Key: 1. Classroom 2. Girls' Toilet 3. Boys' Toilet 4. Storage 5. Study Hall 6. Upper Part Gymnasium 7. Library 8. Project Room

brochure was placed in the hands of all taxpayers which clearly and graphically portrayed the need for the new school; the student council held a special assembly, emphasizing that all students should help "get out the vote." A committee of mothers of the PTA organized a "telephone committee" which called preassigned names on the day of the vote, urging that each and every eligible voter cast his ballot!

And then came the district's decision. When the district centralized in 1946, a total of 600 votes had been cast. On this day of decision for a new school, 1400 citizens, parents, and taxpayers, believing in education as a foundation stone of American democracy, voted 13 to 1 in favor of the new school; it was for their own plan, based on their own educational needs and desires for their own children.

The architect's plan revolved about the former junior-senior high school, too good to be discarded and torn down, yet lacking proper facilities in certain fields. This building presented excellent possibilities as an elementary school, with rooms of adequate size, excellent lighting, and plenty of chalkboard and bulletin board space. So the plans called for changing the former high school into an elementary building with 20 classrooms, gymnasium, teachers' rooms, shops, and conference and visual-aid rooms. To this was added a new one-story kindergarten and first-grade wing of seven rooms, with bilateral lighting, separate play areas, and lavatory facilities in each room. Connecting the elementary school with the new junior-senior high school was planned a new one-story building, which would house the services used by all grades — health, guidance, administration, art, music, and a modern kitchen between the two cafeterias.

A new gymnasium was planned to be conveniently located near the main entrance to the new junior-senior high school. This is 100 ft. square and is equipped with a sliding 102-ft. partition to divide it into two halves for simultaneous use by boys and girls. Collapsing bleachers which will fold into the walls, provide seating for 1200 persons. Four 11-ton prefabricated steel frames, stretching 102 ft. through the air, provide a radical departure from orthodox roof construction. This "rigid frame" design has been used in this country for about eight years, but is not known to have ever been used previously in this area. Its principal feature is its strength and clean appearance, eliminating truss construction, which involves the use of many small steel triangles to support the roof. The result is an extremely clean interior ceiling appearance in place of the usual lacing of steel work found in the orthodox construction.

The final and largest part of the new construction consisted of the junior-senior high school, 450 ft. long, two stories high, which housed all the classrooms and laboratories of grades 7–12. The industrial-arts department was placed at the end of the building connected by a narrow corridor, so that the noise of the planers and saws will not bother other classrooms. The senior science department consists of three rooms, a chemistry and physics laboratory, and a biology room separated by a lecture room with 54 seats in tiers. The library is conveniently located opposite the senior study hall. All rooms have asphalt tile floors, green glass boards, and harmonizing pastel colors. The corridors have terrazzo floors and built-in lockers with combination locks.

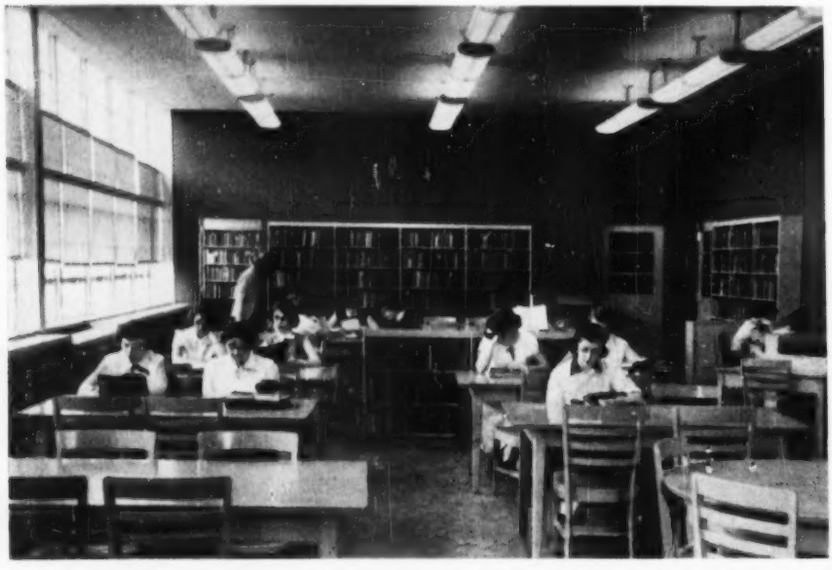
The play areas consist of a quarter mile cinder track with a steel curbing and a football field within the track. The baseball diamond, with its shortest field 350 ft. deep is alongside the track. There are also practice fields for varsity sports and fields for the use of the girls. The elementary school has its own play areas.

In all planning and construction, emphasis has been placed upon the separation of the different age groups. The senior high school pupils do not cross or come in contact with the elementary groups, and they in turn are separated from the kindergarten.

One of the most important citizens' committees appointed by the board was the finance committee composed of five public spirited residents, who hold important positions in banking circles. This group was consulted on all financial matters and gave valuable

The gymnasium will seat 1200 spectators in folding bleachers. A large partition divides the room for separate use by boys and girls.

help. The legal advisers of the board, the State Department of Education, and this committee recommended that the bond issue of $1,715,000 be for a 30-year period and that $55,000 of the principal plus interest be paid off each year. The board then had an interesting but nerve racking experience. As required by law, the bond issue was properly advertised and the date set for opening the bids. Two days before the appointed day, the Korean War broke out. The bond market was anything but favorable. The bids were to be opened in the school office at 3:30 p.m. On that day at 2:30 p.m. the representatives of various bond houses, who were at the school, tied up all the telephones calling their offices and getting the latest information on world conditions and bond prices. At 3:30, the bids were opened, but, whereas the board had expected to pay about 1.6 per cent, all bids were 2.25 per cent. The disappointed board went into a huddle with the Finance Committee, realized it was the worst day of the year for selling a bond issue, rejected all bids, and decided to try again a month later. It was felt that either there would be a real war and no building material would be available, or the bond market would have settled and a more favorable rate could be expected. Again, the issue was advertised and the bids opened. The bond issue was sold at a 1.9 per cent rate. This, along with the premium, meant that the board saved the district $80,000 by waiting that one month.



Comfortable furniture, a harmonizing color scheme, and ideal natural and artificial lighting make the library an ideal place to work. Acoustical tile ceiling and an asphalt tile floor contribute to quiet.

We have naturally had many visitors. Their comments and the parts of the building that draw attention and criticism are of particular interest, as they show the reactions of people not acquainted with the history of the building, who have no ax to grind, and who frankly state their opinions. General comments emphasize the practicability of the school, its clean-cut design, its friendly atmosphere (if that can be applied to a building), and the pleasing color combinations in the rooms. Schoolmen remark on the ease with which it can be administered, stressing the ample play areas, the well-lighted and spacious classrooms, and the separation of different age groups in bus loading zones, cafeterias, and play fields. The lay people are attracted by the gymnasium, the industrial-arts department, the tiered science lecture room, the band practice room with its unique acoustical controls, and the administrative unit with its various communication devices, and the like. The common remark of the Central Section of New York Student Councils, which met here the week after the building was opened, was "It is out of this world."

The total cost of the project was $1,715,000.

(Concluded on page 96)

Planning for the Future —

High School Science Facilities

Theodore W. Munch and Warren J. Pelton***

I. General Considerations

Foresighted school boards and administrators in secondary schools are beginning to consider the problems attendant upon the influx of students into high schools which is certain to occur in the next decade. It is evident that in most communities present high school facilities will not be adequate, and that new buildings will have to be constructed. When investing funds in new schools, every community wants to *get the most for its money*. For school boards, this phrase has a particular financial meaning. For school personnel, getting the most from an outlay gains additional significance in terms of the amount and quality of teaching which is made possible by schoolhouse environment.

Very little evidence is required to show that science is one of the subject areas in high school most easily hindered by poor room design and ill-planned or insufficient laboratory furniture and equipment. The purposes of this article, and the two which will follow, are (1) to suggest ideas which may serve as guides for the design of science rooms, and (2) to present a set of specific plans for a physical and a biological science suite. These plans, it is hoped, will serve as starting points for planning rooms adapted to any local situation.

In the past, personnel responsible for school construction rarely have been given due consideration to the activities used in science teaching. Past practices may be summed up by saying, "Here are your facilities, do what you can with them!" The better idea has gradually evolved of planning the science suite from "within": that is, in terms of how the rooms are to be used by the teacher and students. A survey, conducted by the authors, of California senior high schools built since 1945, revealed that the character and number of activities in science teaching depended to a considerable degree upon the size, arrangement, and equipment of the science rooms. The activities used in the California high schools are listed in the paragraphs which follow. In connection with each classification is a general discussion of room arrangement and equipment which best facilitate the activities.

*Department of Science, San Francisco State College, San Francisco, Calif.

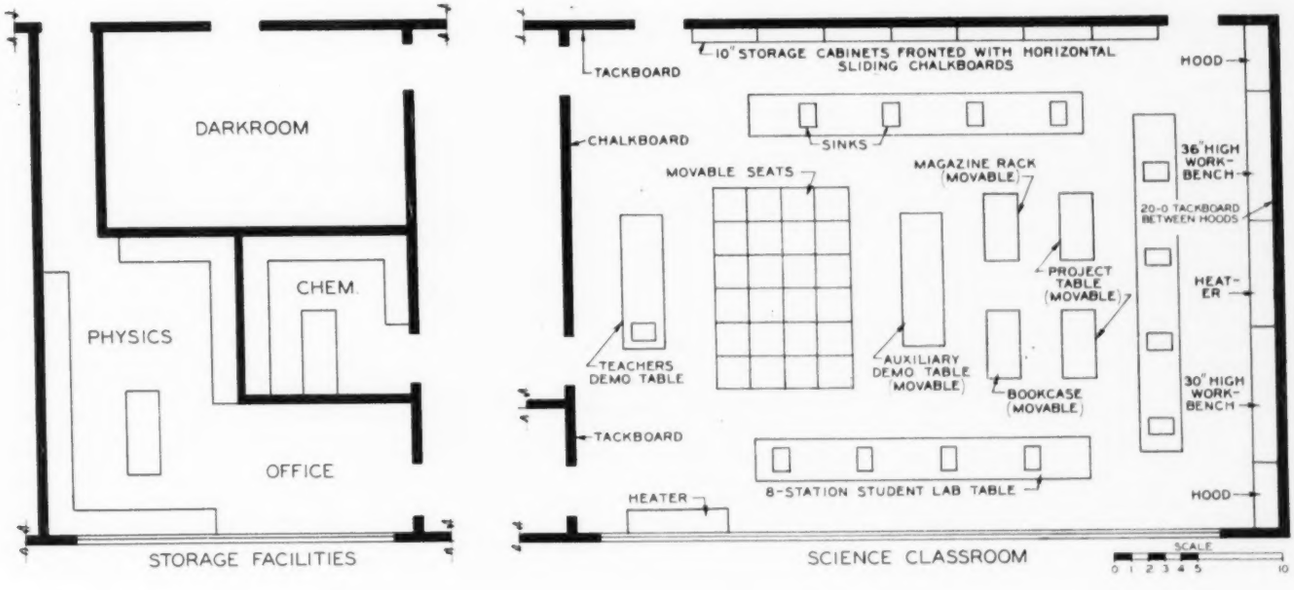
**Department of Education, Bowling Green State University, Bowling Green, Ohio.

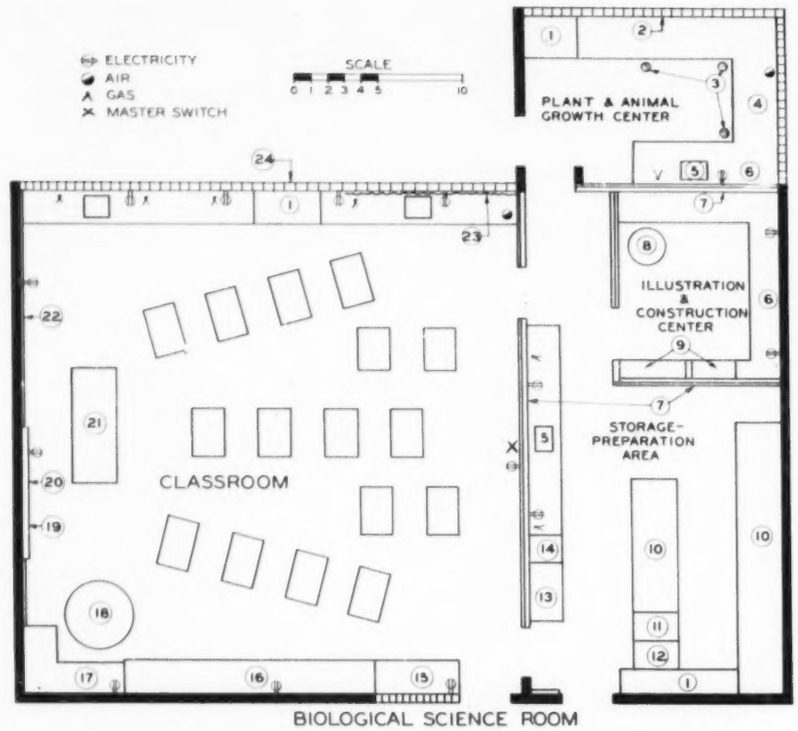
II. Activities Conducted in Science Teaching

A. *Use of Audio-Visual Aids*

1. Motion pictures
2. Slide films
3. Strip films
4. Pictures
5. Charts and graphs
6. Bulletin board displays
7. Chalkboards
8. Television
9. Radios
10. Recorders

Construction Needs. Facilities should be provided in science rooms to permit complete or partial darkening of the rooms, easy adjustment of curtains, and adequate ventilation during picture projection. The screen should be located to permit of easy setting up and removal. Tackboards should be ample, and so located as to prevent congestion about corridor doors and within the classroom traffic pattern. Chalkboards may be of the multiple type to conserve space. Both tackboards and chalkboards should be light in color and have reflection factors high enough to prevent un-





BIOLOGICAL SCIENCE ROOM

Key:
1. **Heating and Ventilating Unit**
2. **Glass Plate**
3. **Drain**
4. **Metal Stand**
5. **Sink**
6. **Work Bench**
7. **Vision Strip**
8. **Table**
9. **Tilting Drawers**
10. **Storage**
11. **Refrigerator**
12. **Vermin Proof Storage**
13. **Desk**
14. **File**
15. **Display Case**
16. **Display Cabinets**
17. **Book Case**
18. **Reading Center**
19. **Multiple Chalk Sliding Board**
20. **Projection Screen**
21. **Movable Demonstration Table**
22. **Tackboard**
23. **Drapes**
24. **Prismatic Glass Block**

desirable light contrasts with the wall surfaces and the furniture. A map rail above the chalkboard and tackboard facilitates the use of maps and charts, and has the advantage over roller-type storage in that materials may be displayed from more than one position in the room.

Bulky items such as charts, graphs, and bulletin board displays require special storage facilities which should be available for easy access from the classroom as well as from the storage-preparation areas. While the use of radio and television is not frequent at the present time, the early development of Educational TV Stations gives promise that these media will become widespread in the future. In planning for future construction, it is wise to arrange for the inclusion of the necessary antennae and electrical outlets for both radio and television.

B. *Laboratory Activities*

1. Group experimentation
2. Individual experimentation
3. Teacher and student demonstrations
4. Use of the microscope
5. Examining specimens and other materials
6. Caring for plants and animals

Construction Needs. The selection of laboratory work benches and tables is a matter of prime importance. In the case of stationary units, the items selected should be high enough to prevent back strain, and yet low enough to permit work in a seated position. These benches are arranged best if the teacher can observe all of the student body at one time. For the sciences in which there is considerable drawing, sketching, reading, and writing, table tops should be adjustable to an angle which permits comfortable execution of the tasks at hand. All benches and tables should provide a reflectance factor between 35 and 50.

The preparation of demonstrations and special experiments by the instructor or students needs an area set aside from the main classroom so that work may proceed unmolested.

Storage facilities for science rooms need special consideration. Cabinets and drawers should be available in adequate sizes and variety in both the main classroom and the storage-preparation area. Attention should be given to the placement of storage facilities and an open space in front of each cabinet or case of drawers so that pupil congestion is avoided during laboratory periods.

In biology classes the study and care of plants and animals requires a center for plant and animal care and growth, where temperature and humidity may be controlled. The floors and walls must be finished so that they may be easily washed. Care must be taken that the special equipment for this activity may be stored.

C. *Nonlaboratory Activities*

1. Use of current learning materials
   - *a*) Textbooks
   - *b*) Reference books
   - *c*) Magazines
   - *d*) Pamphlets and commercial materials
2. Reading and writing
3. Evaluation
4. Group activities
   - *a*) Buzz sessions
   - *b*) Panel discussions
   - *c*) Sociodramas
5. Use of outside laboratory and garden
6. Field trips
7. Lectures

Construction Needs. Library space is needed in the individual rooms for magazines and books. Space allotment for these activities should allow at least three or four students access to the library at one time without congestion; space is needed too for magazines, books, charts, graphs, and commercial materials when not in use.

To facilitate reading and writing, as well as close work at the laboratory table an even distribution of natural light should be maintained throughout the room. The reflection factors of the various surfaces throughout the room should conform to standards which aid in light distribution, prevent eyestrain, and prevent "hot spots" or glare. The artificial light fixtures should provide a minimum of 30 foot-candles on all working surfaces in the room. The student writing surfaces should be a minimum of 350 square inches per student.

The chairs, student workbenches, and as much other furniture in the room as possible should be movable in order to provide for small group discussions and other desired forms of flexibility.

The science room should be on the ground floor, close to the homemaking department, mathematics department, and industrial-arts department. The science room should provide immediate access to the outdoor areas to facilitate the use of the outdoor garden and laboratory and field trips.

D. *Project Activities*

1. Collecting and preparing specimens
2. Making drawings and sketches
3. Making models and replicas
4. Preparing school and community exhibits

Construction Needs. The students' work on individual, group, and class projects requires special facilities which aid in the learning process. A separate room for these activities is most desirable. Such an arrangement will allow students to carry on with projects during lecture and laboratory periods without

disturbing other members of the class. Some space within the classroom is also desirable for projects which are being done by the entire class or a large group.

There is a need for glass enclosed shelving within the room for the display of completed projects. This display area should be enclosed with sliding panel glass doors which have locking facilities. There should also be a display case facing the corridor but accessible only from the classroom side of the corridor wall. This case is to be used for science exhibits which should be observed by the school and community. This case should also have locking facilities.

Although it is evident that all teachers will not immediately follow teaching techniques which require all the facilities just described, future science rooms should be constructed so that any of the activities can be conducted in an adequate manner when teachers or teaching methods are changed.

III. Plans for Biological and Physical Science Rooms

When all the foregoing activities are thoroughly understood, and space requirements are determined, then the stage has been set for the planning of the science suite. The authors, keeping these facts in mind, have devised a floor plan for a functional biological science suite and a functional physical science suite.

A. *Biological Science Room.* The biology suite is constructed to accommodate a maximum class of 30 students. Three special activity centers are included in this layout: (1) a reading center located in the main classroom; (2) an illustration and construction center as an integral part of the preparation and storage area; and (3) a plant-and-animal-growth center enclosed with glass construction located on the south side of the suite. A southern orientation is predicated for maximum sunlight for plant growth. Natural lighting is controlled by the use of directional glass block above the clear vision strip.

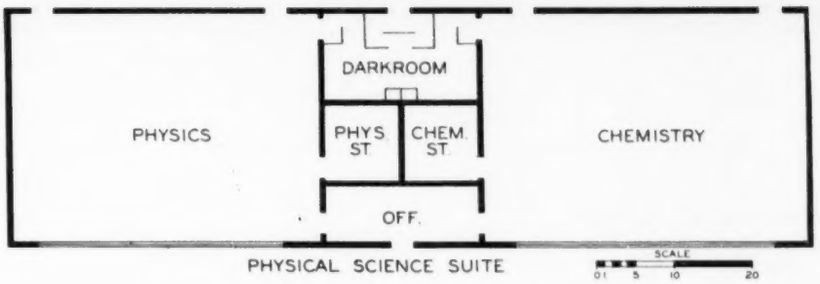
All furniture, including the demonstration table, is movable to provide flexibility and to make the execution of small-group activities more convenient.

Storage facilities are located on both sides of the room beneath the workbench and the storage cabinets.

This biology suite is to be planned so that it will be on the ground level, in the same wing with the other science rooms and as near as possible to the home arts department, the audio-visual aids department, an easily available exit, and a service road.

DIMENSIONS OF BIOLOGY SUITE

	Length	*Width*
Over-all (exclusive of the plant and animal center)	46 ft.	30 ft.
Classroom	30 ft.	30 ft.
Storage-preparation area	16 ft.	30 ft.
Construction and illustration center	10 ft.	10 ft.
Plant-and-animal-growth center	16 ft.	10½ ft.



B. *Physical Science Room.* The physical science room is a combination lecture room and laboratory. The room can be used for the teaching of both physics and chemistry. Too often, in the average high school, separate facilities are constructed for physics and chemistry when such facilities are not demanded. A more reasonable plan which will be advantageous to both the taxpayers and the students, is to have one very well-equipped laboratory for all the physical sciences. Although this room is planned to accommodate 24 students, other rooms can be arranged using the same basic principles, to accommodate the specific number of students found in any situation.

This combination room has ample facilities for individual laboratory work, project work — individual, group, and class — chalkboard space for problem solving, and ample tackboard space for displaying current materials. The room is also arranged to facilitate the use of buzz sessions, sociodramas, picture projection and other teaching techniques desired by the individual teacher. The dimensions of this room are 42 by 30 feet. This allows approximately 50 square feet of floor space per student.

NOTE: In succeeding articles these floor plans will be analyzed in terms of the use of the floor space and the facility requirements for specific activities. — *Editor.*

School Building —

Superintendence by a Clerk-of-the-Works

*William Stanley Parker, F.A.I.A.**

The Standard Form of Agreement between Owner and Architect adopted and used by the American Institute of Architects makes a clear distinction between the "general supervision" of the architect and the "continuous on-site inspection of a Clerk-of-the-Works." The function of the clerk-of-the-works and the limitations on his authority are sometimes not clearly understood. His normal duties are described in considerable detail in the Handbook of Architectural Practice, issued by the Institute. Somewhat more briefly they may be described as follows.

The clerk's function is to be the representative of the architect, on the job in all working hours, to detect deviations from the requirements of the contract, to report such to the architect, and to appraise the progress of the work in connection with the contractor's requests for payments. Finally, he is to receive and pass to the contractor any instructions the architect may give.

*American Institute of Architects Consultant on Contract Procedure, Boston 16, Mass.

In order to perform his duties adequately the clerk must be conversant with the practical processes of construction and completely familiar with the plans and specifications. He can be of assistance to the contractor in interpreting the plans and specifications but must assure himself of his ground whenever there is any doubt by conference with the architect. He must be able to detect poor workmanship in the many trades involved as well as defects in materials.

Neither he nor the architect has authority to relax or nullify the requirements of the contract documents. If such be needed it must be by agreement of the architect and the owner and confirmed by instructions in writing from the architect to the contractor.

Clerk and Contractor

The clerk must be on reasonably friendly terms with the contractor and must command confidence by reason of his technical knowledge and experience in the processes of building construction, and his fairness in judging

the quality of materials and workmanship.

He can be of assistance to the contractor by anticipating difficulties and delays, being conversant with the contractor's scheme for the progress of the work and making sure that materials are arriving in proper order in relation to actual progress of the work.

He is required to make such daily, weekly, or monthly reports to the architect as the latter architect may prescribe, including any graphic indications of the progress of the various important subdivisions of the work, in relation to the estimated progress required to complete the work within the prescribed time limit.

He will need to receive from the architect copies of all orders, shop drawings, and other directions issued, and keep them all clearly in mind as the work progresses. It is not necessary here to elaborate on the routine procedures to be employed. Each architect will develop his own routines, forms for report, and procedures for periodic conferences with the contractor on the job. In all of these the clerk-of-the-works will be involved as the direct employee and representative of the architect.

Clerk and Owner Relations

The relation of the clerk-of-the-works to the owner is more indirect, although he is employed with the owner's approval and is paid by the owner through the architect. He should, however, be selected by the architect who must pass upon his competence. As noted above, all official reports should be made to the architect, and all official instructions regarding the work should be received from the architect. However, whenever the owner visits the job, the clerk-of-the-works is required to attend him and to give him full information on any matter of interest to him. If the owner expresses any specific desires involving any change in the work, the clerk should immediately convey these to the architect for his instructions, as all such instructions from the owner should go to the contractor from the architect who may need to confer with the owner before a change is finally decided on.

Clerk and School Board Relations

All the above relates to the situation as it normally should exist on private work. Conditions may vary widely on public work where the owner is a governmental unit represented by a public official. This is particularly true where a public board, such as a school board, is involved in a continuing program of construction. In such a case it is as necessary for the board to establish a routine policy for job inspection as it is for an architect to establish his own office practice, but in such a case the general routine found desirable and established by the board should be careful to maintain the single control through the office of the architect. It is equally important in such cases for instructions from the board to go to the architect and from the architect to the contractor.

In a schoolhouse construction program, each structure will need its own clerk-of-the-works, and copies of the clerk's reports should go to the board as well as the architect. Direct control of the field inspection is sometimes taken over by the board, the clerks being employed directly by the board and reporting to it rather than to the architect, copies of reports going simultaneously to the architect. Special understandings and instructions are necessary in such cases which involve a direct relationship between the clerk-of-the-works and the school board or other public agency.

Such situations are special and must develop their own routines, the architect being employed to give his usual "general supervision." There is danger that confusion of responsibility in the field may develop when this dual system is adopted instead of placing full responsibility for supervision on the architect. So far as instructions from the school board are concerned, as noted above, they should go from the board to the architect. When final decision is reached by the architect and the board instruction should go from the architect to the contractor, properly countersigned by a duly constituted representative of the board.

This statement does not pretend to treat this subject fully. Much more could be written regarding the desirable procedures and the details of the clerk's duties. This statement attempts merely to describe the functions of a clerk-of-the-works in outline and to indicate his appropriate relationship to the architect, the owner, and the contractor.

CLASSROOM FINISHES FOR VISUAL COMFORT

*C. J. Allen**

"They're better kids. They're not as restless. They don't have to be disciplined as much. They study more. They're happier," such were Superintendent Mark C. Shinnerer's comments about pupils when lighter and more colorful finishes were used in the Cleveland classrooms. Similar remarks are being heard wherever the dark drab classroom finishes of yesterday are giving way to the lighter brightness-balanced finishes being used today.

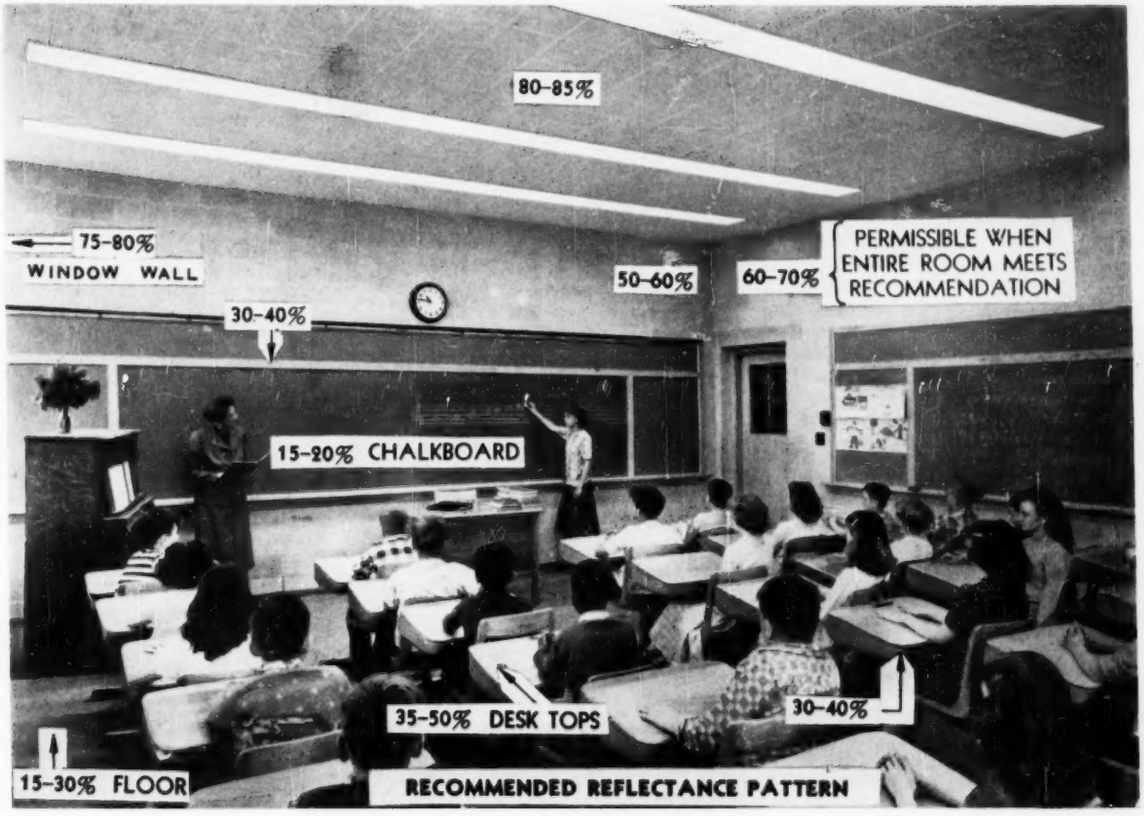
It wasn't very long ago when the standard classroom paint used was what many a schoolman called "schoolhouse mud." The apparent goal was to have a paint which would match the average color of dust and dirt. The painter started out with a bucket of cream or ivory, generously fortified it, and darkened it down with tubes of umber and ocher. The other important surfaces of the classroom were also given the darkening treatment. Desks and wood trim were restained and varnished dark and glossy. Floors were soaked with oil — to keep down the dust. This was accomplished, but the floors were soon a deep brown from the accumulated grime. To add to the general order of darkness the children were surrounded on three walls with broad bands of blackboards. The general dreariness and dismalness was difficult for the teacher to overcome.

*School Lighting Specialist, General Electric Co., Nela Park, Cleveland, Ohio.

While better discipline and cheerfulness is a desired feature in classrooms, it was not the primary reason for the illuminating engineers' recommendations for lighter finishes. He has based his recommendations on better utilization of light and on controlled laboratory investigations which show that seeing was best when the brightness of the object being seen was just slightly higher than its surroundings. Thus a book may be studied with better visual ease when it is on a light finished desk than when it is on a dark finished desk. The floor is also in the field of view of the student and it too shouldn't be too dark. As the student looks up from his desk work and observes the teacher's face, or the chalkboard, these areas should be in reasonably close brightness balance with their background. A 1 to 1 brightness ratio is considered ideal, but not easily attainable from a practical standpoint. A 1:3 ratio is generally attainable and is considered the practical goal. The recommended reflectance values shown in the photograph are based on the desirability of remaining generally within this ratio.

Improved Reflectance of Light

Progressive strides have been made by the various interested industries to comply with the recommended reflectances. For example, in four short years the entire school desk industry has switched from dark



The reflectance values shown are based upon the recommendations given in the current American Standard Practice for School Lighting. Reflectance is defined as the percentage of light reflected by a surface.

stained desk tops to light natural finished desks. Those who attended the 1947 AASA Convention in Atlantic City saw one or two light desk tops on exhibit. By 1951 not a single exhibitor featured the dark finished desk. Light finished desks had become standard. In many school systems the old but still serviceable desks are being refinished back to the natural birch or maple wood and sealed with clear non-glossy varnishes or lacquers. Where the carvings and doodlings of bygone students were gouged a bit too deep in the desk top, the new tough laminated plastics are being cemented down over the old desk tops. Costs of refinishing desks in this way are being reported at one fourth to one fifth the cost of new desks. These plastic materials come in natural wood patterns and special patterns designed for school applications in the 0.35 to 0.50 reflectance range. Paints in tough durable finishes have been developed in the 0.30 to 0.40 reflectance range for the undercarriage of the desks.

The green chalkboard has shown a popularity and growth parallel to the light finished desks. This trend was started by the illuminating engineer when they specified 15 to 20 per cent reflectance for the chalk writing area. It, too, was based upon the general goal of a 1:3 brightness ratio of the board with its background. One difficulty has arisen in that boards higher than 20 per cent reflectance have been made. With these lighter finishes the contrast of the chalk on the board is reduced and visibility from a distance has accordingly suffered. The 15 to 20 per cent reflectance was implied to be the reflectance when in use and chalked-in. Thus a new board will start with a lower reflectance. Green chalkboards are available in a variety of types. They come in wood pulp and asbestos composition base with green abrasive finishes, solid green plastic, glass, and steel with fired abrasive enamel surfaces. The steel board is being used also as a tackboard with the aid of the new small powerful magnets to hold papers in place instead of ordinary thumbtacks. Football coaches and band directors are using the magnets to represent players to demonstrate various formations. The recommendation for boards of 15 to 20 per cent reflectance was based upon improving brightness ratio conditions, but the green chalkboard's popularity may also have been due to several other reasons. The green board is cheerful and colorful. Green is also roughly the complement of the color of our complexion; thus the warmth of the soft orange-pink skin tones of a teacher's face is enhanced when she stands in front of such a blue-green surface. The slate blackboards, which are really gray when in use, are still good durable chalk writing surfaces. They run slightly less than 10 per cent in reflectance. If additional lighting is applied to them as shown in the illustration they, too, come well within the 1:3 brightness ratio.

Good Colors Available

The illuminating engineer is not too concerned with the exact color used on the classroom walls so long as it is within the recommended reflectance range. A classroom could be decorated in shades of gray which would meet these specifications but the rooms would not be well liked — people universally like color. Color recommendations are generally based upon the psychological effect of the various colors. For example, the blues and green which we associate with the sky, lakes, and trees are considered to be cool colors. They are frequently recommended for west and south exposure rooms which may feel overly warm due to sunshine. On the other hand, the creams, corals, peaches, and

tans are warm colors. They are frequently recommended for north or east exposure classrooms. The cool light pastel colors are receding colors and tend to make a room seem larger. The reverse is generally true of the warm colors. The greens, especially of the blue-green family are quiet colors and people seldom object to them and hence they are widely used. The blues have a tendency to create a chilly atmosphere and warm colors should be used with them to overcome this. The most widely used of the warm pastels are those referred to as coral, peach, and tans. Pure yellow is a warm color but it has a low preference rating. When considerable white is added to it to make it a 75 per cent reflectance pastel, it then becomes a very cheerful and bright color. It is probably best used in corridors and foyers which generally have lower lighting levels than the classrooms. The light grays are finding considerable popularity for use on one of the classroom walls, such as on the rear wall, with the other walls in any color desired. The gray wall seems to serve the purpose of whetting the appetite for better appreciation of the color on the other walls. The use of two colors of the same reflectance on adjacent walls has been used very effectively. The use of a different color for every classroom is met with skepticism by some because of the paint stocking problem. Actually, five basic wall colors could give all the variety desired. The five could be blue-green, warm tan, gray, blue, and coral or peach, all in roughly 60 per cent reflectance.

Ceilings Important

Nonglossy white is recommended for ceilings. With indirect lighting the efficiency of the lighting system will increase with the reflectance value of the paint used on the ceiling. A few years ago 75 to 80 per cent reflectance was the typical reflectance of white paints. The recent wide use of titanium pigments has resulted in an increase in the whiteness of white paints. Improved vehicles such as the alkyd resins also have resulted in less yellowing with age. The white paints are whiter and stay whiter longer. Recently the white ceiling paints of three paint companies were tested. The measured reflectances ranged from 86 to 90 per cent. The importance of these higher values is that some of the new indirect lighting systems in schools have shown somewhat higher lighting levels than were anticipated from calculations. One reason for this is that the usual illumination calculation tables available are based upon 75 per cent reflectance for ceilings. By extrapolating the data in these tables for indirect lighting it can be shown that roughly one fifth more light is delivered to the desks with 85 to 90 per cent ceilings than with 75 per cent ceilings. With luminaires which direct less light to the ceiling than do indirect fixtures, calculations would show a less gain. Acoustical type ceilings are best used, from an illumination efficiency standpoint, with lighting equipment such as recessed troffers which do not depend upon the ceiling as a principal reflecting surface. Acoustical materials vary widely as to reflectance value because of the holes or voids in the material. Reflectances of 60 to 75 per cent may be expected with acoustical ceiling materials.

This fluorescent chalkboard unit increases the illumination on the chalkboard to about 100 footcandles, significantly improving visibility, attention value, and brightness differences with the adjacent wall. It demonstrates that it is possible to paint with light as well as with paint.

Most schools today have some program for relighting their classrooms. The older rooms lighted with typical enclosing globes gave the students about five foot-candles on their desks. With fluorescent lighting and lighter finishes the relighted classrooms are providing the students with six to ten times this amount of light with only moderate increases in wattages. The teachers and principals are finding that the students study better, have less discipline problems, and are happier in these rooms.

Light and paint are partners in the relighting programs. If new lighting is put in, but the darker finishes are not changed, the benefits are only partial. If only one thing can be done at a time it is better to repaint first and set the stage for the new lighting to come. The maximum benefit is accomplished when the classrooms are repainted and relighted at the same time.

◆

WHEATON BUILDING PROGRAM

At Wheaton, Ill., the board of education has five school building projects under way. The program, estimated to cost $4,088,000, includes two elementary schools, a junior high school, and additions to two schools. The elementary schools, to cost $255,000 each, will be completed and occupied in September, 1953.

The junior high school, planned for 720 pupils, will contain 24 classrooms, shops, a music room, a cafeteria, and a library, and will be completed in 1954, at a cost of $1,141,000. The addition to the high school, to accommodate 1400 pupils and to contain 24 classrooms, will cost $2,250,000.

All of the educational planning for the several building projects has been carried out by Dr. D. R. Blodgett, superintendent of the Wheaton schools.

A Triple Problem —

Marion Sells School Building Program to Community

*L. L. Dickey**

In 1946 the school district of Marion, Ohio, voted a $2,100,000 bond issue to erect several badly needed new school buildings. By the time construction was started in 1950, rising costs made an additional bond issue of $2,900,000 necessary to complete the program. This additional bond issue would bring the school district to the maximum legal debt limit of 8 per cent of the property valuation. There were strong reasons before the school authorities that the additional funds would not be voted at the May primaries without a considerable public campaign.

In 1951, a citizens committee was developed to study the need and to help make the decision to place the issue on the ballot. Following the decision of the committee and with its aid, the following appeals were made to the electorate:

The State Street Junior High School at Marion, Ohio, provides space for a well-rounded program for grades 7, 8, and 9.

Fourteen Successful Steps

1. A booklet explaining the need for the bonds, entitled "Invest in Us," was written and widely distributed.

2. Leading citizens made carefully planned radio addresses.

3. Spot radio announcements were sponsored by the Marion Automobile Dealers Association.

4. A series of newspaper articles, explaining the critical school building situation and outlining the building program, was prepared with the help of a professional newspaperman, and signed by a small subcommittee of the citizens committee.

5. Photographs depicting unsafe and unfavorable conditions in the old buildings were given front page space by the local newspapers.

6. A speakers committee presented the school building needs to a considerable number of organized groups.

7. The groups addressed were asked to endorse the bond issue, and these indorsements were used in the press with a widespread favorable impression.

8. A number of advertisers ran large special newspaper advertisements favoring the bond issue.

9. The week-long dedication program of a new junior high school, just a month before the election, brought 10,000 people into that building and many said, "This is a good building. Let's have more like it."

10. The superintendent of schools mailed a letter to the parents of all preschool children impressing on them the fact that their children would be the ones to suffer if the school building program failed.

Nearly 10,000 homes in Marion, Ohio, displayed the above pledge on the day before the increase in school taxes was voted.

11. Posters were made by the school-art classes pointing out the school building needs, and a few days before the election every child took home an original drawing done by himself urging his parents to vote for the school bond issue.

12. School children brought in the names of neighbors who had no children in school. The children then wrote personal letters to these neighbors appealing for support of the election. These letters were sent through the mail.

13. At each of the high schools an assembly was held, at which the benefits of the bond issue were pointed out. The students were urged to use their influence at home and with their relatives, friends, and neighbors, to bring about a favorable vote.

A Successful Parade

14. On the evening preceding the election, a parade of 4000 school children brought out a crowd of 10,000 onlookers. This parade, with interesting floats, passed through the business district, and it was so organized and conducted by the student councils of the schools, under faculty supervision, that no adult appeared anywhere in the parade. In fact, no adult person with any school responsibility was present along the line of march after the parade passed its starting point. The children were thus "on their own,"

*Supt. of Schools, Marion, Ohio.

Air View of the Harding Senior High School, Marion, Ohio. Since the picture was taken in August, 1952, the building has neared completion.

and not one instance of mischief or harm to a child occurred during the evening.

A Second Campaign Needed

At the election, May 8, 1951, the school bond issue passed by a very large majority. However, the gratifying success did not solve the financial problems of the school board. A considerable increase in the operating money was needed and in midsummer a representative group of citizens from business and civic groups in the community was called together by the school board to discuss the plight of the schools. After hearing the facts and discussing the situation the committee unanimously recommended that the board of education place on the ballot in November an additional operating levy for four mills. Although there was much sentiment in town for schools, opinion was divided on whether this levy would pass. Could the school district within a year fairly double its school taxes?

The important question before the school administration was how to promote a favorable vote on the levy without repeating the devices used previously for the bond issue. Taking advantage of information received at Teachers College, it was decided to determine what types of promotion had most strongly influenced the favorable vote in the May bond issue, and then to repeat only these types of appeal in November.

A questionnaire was prepared and submitted to a geographically spread sampling of 384 people who had voted for the bond issue. A high school senior called at the home of the person to be questioned and first asked if the person would care to say whether he voted for or against the bond issue. If he was willing to say that he had voted for the bond issue, he was handed a check list. This list contained as the first paragraph the statement, "I had made up my mind to vote 'yes' before the publicity started." If this statement was checked, the interviewee was asked to read no further. If he did not check it, he was asked to indicate which of the list of devices used in the campaign had helped him to make up his mind to vote for the bond issue.

Emotional Appeals Effective

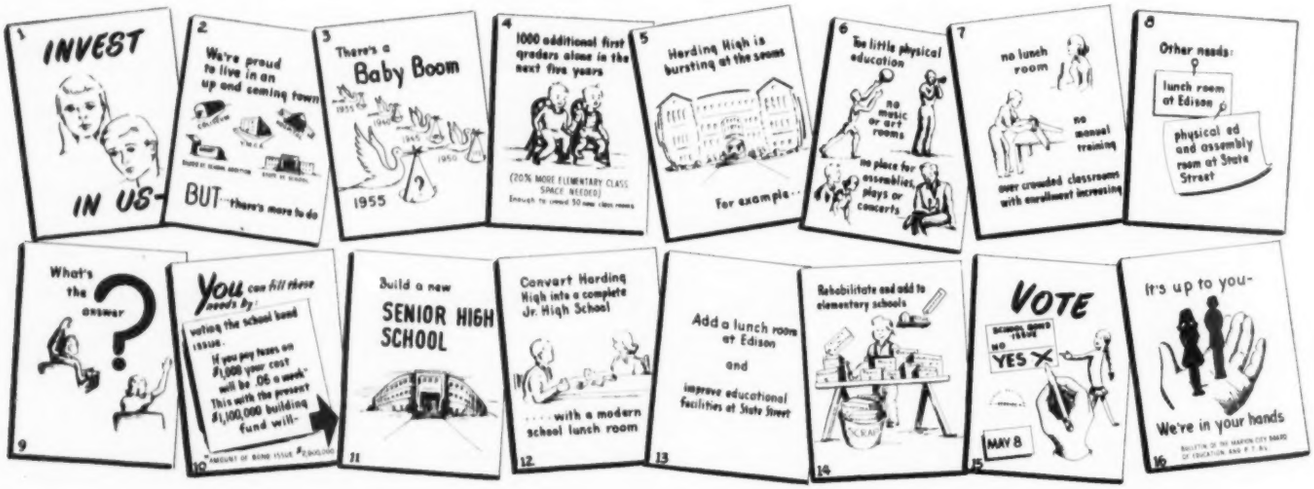
When the results of this questionnaire were tabulated, it was learned that 75 per cent of the people interviewed had made up their minds before the publicity started. The device with the least influence, according to the findings, was the spot radio announcements; next in lack of influence was the letter from the superintendent, then the letters from school children to their neighbors, and then the newspaper endorsements by organizations. Only two techniques seemed to have much influence. One was the parade, which influenced 12½ per cent of the people, and the other was the newspaper pictures of bad school conditions, which influenced 15.6 per cent of the voters. We drew the following conclusions from the questionnaire:

1. Generally speaking, people cannot say for a certainty what influenced their vote.

2. We all dislike to feel that other people make up our minds for us.

3. Even though many of the techniques used seemed to have little influence percentage wise, combined they could have influenced enough people in a close election to assure success.

4. The two techniques of greatest significance, the parade and the newspaper pictures, were appeals to the emotions and not to the intellect.


INVEST
IN US-
We're proud to live in an up and coming town
BUT—there's more to do
There's a Baby Boom
1955
1000 additional first graders alone in the next five years
(20% MORE ELEMENTARY CLASS SPACE NEEDED)
Harding High is bursting at the seams
For example..
Too little physical education
no music or art rooms
no place for assemblies, plays or concerts
no lunch room
no manual training
over crowded classrooms with enrollment increasing
Other needs:
lunch room at Edison
physical ed and assembly room at State Street
What's the answer
YOU can fill these needs by:
voting the school bond issue.
If you pay taxes on $1,000 your cost will be .05 a week.
This with the present $1,100,000 building fund will-
Build a new
SENIOR HIGH SCHOOL
Convert Harding High into a complete Jr. High School
...with a modern school lunch room
Add a lunch room at Edison
and
improve educational facilities at State Street
Rehabilitate and add to elementary schools
VOTE
YES
MAY 8
It's up to you-
We've in your hands

The sixteen pages of an effective four by five and one-half inch bulletin printed in two colors are shown above. Pictures quite as much as text tell the story of the Marion need for additional schoolrooms.

The Second Successful Campaign

After studying the results of the questionnaire, it was our decision to base our appeal in the November election more largely on the emotions than on mere understanding. We were careful to give the community full information through the newspapers, the radio, and organized groups, but the fund of $400 given to us by the Manufacturers Council of the Chamber of Commerce to promote the levy was spent on three techniques designed to move people emotionally. These were as follows:

1. We printed a black on yellow, 9 by 11 inch, window sticker. Several days before election, one of these was sent home with every school child. He was told to ask his parents to place the sticker in the front window. He was further told that if the sticker was so placed at noon on that day, the family would not be bothered by a caller who would ask that the sticker be placed in a window. Consequently, on that afternoon, there appeared simultaneously in several thousand homes this sticker, reading

"We will vote for school funds.
Give the kids a break — November 6."

Later in the day teams of upper grade children, under the direction of PTA workers, called at every home which had failed to post the sticker.

Human Interest Advertising

2. A photographer was sent to the 15 school buildings in the city, and from a second-story window, photographed the entire student body massed on the playground below and looking up at the camera. Leading advertisers printed these pictures in half-page and full-page advertisements in the local newspaper. These advertisements appeared within the week preceding the election. Word was sent to the homes that the photograph of their children would appear in the newspaper. The pictures of individual children were distinct in these advertisements and aroused much interest.

3. Two thousand brightly colored posters were printed, containing a minimum of wording and the photographs of one of the pupil groups. These posters were placed everywhere — in store windows, offices, manufacturing plants, and public buildings.

While we are not certain how much influence these appeals had on the election, the four-mill additional school levy did pass even though two of the three other tax issues on the ballot failed. The school levy led the list with a fine majority and now gives us a total of almost 21 mills, fully seven mills higher than any previous school tax.

Our conclusion, seemingly substantiated, that voters respond to school needs largely through an appeal to their emotions, presents an opportunity and suggests a danger. The danger may be expressed in two questions: (1) Why should not the schools, working mainly with the minds of the people, be

(Concluded on page 91)

Recent Judicial Opinion: II —

Board Acceptance of School Buildings

*Stephen F. Roach, Ph.D.**

It has been well said that all educational administration is based in law, since it obtains its structure from the provisions of various constitutions and legislative statutes. Equally true would be the statement that school administration secures its operational patterns from the courts, since court rulings, in effect, furnish its guiding principles.

Directing the efficient and economical operation of school systems, by putting this enacted and judicial law to work, is the task of educational administrators. The portion of this task assigned to local boards of education involves the determination of the educational needs in their districts, the formulation of appropriate educational policies, and the appraisal of results after these policies have been executed by the board's professional staff.

It thus becomes almost a redundancy — but it merits repetition nevertheless — to say that in carrying out these responsibilities, school board members should insure that their actions are in full accord with existing principles of law. One method of so doing utilizes a prior determination of those legal principles — established earlier by appropriate courts in settling similar or related issues — which are likely to be invoked as the result of a contemplated board policy or procedure. Once so determined, the pertinent legal principles can then be critically inspected and correlated with the proposed action — *prior* to its enactment.

Such an analysis, if carried out on a continuing basis, could well decrease the number of school boards involved in litigation or reduce the not inconsiderable costs attendant upon present-day lawsuits.

An example of one type of the established legal principles relating to school board administration — the acceptance of school buildings — and the type of helpful information these principles make available to discerning board members will be discussed in this article.

A Case in Point

In this case[1], decided in the Washington state Supreme Court on October 2, 1952, the facts showed that the board of directors of school district No. 342, Pierce County, had contracted for the remodeling of their Edgemont school. The contractor, as required by state statute, furnished a performance bond, which the American Surety Co. executed.

At their meeting on November 13, 1950, the district board of directors, after hearing the recommendation of their architect that the contract be accepted, voted to "accept the contract . . . as complete, subject to the completion of certain items referred to in (contractor's) letter of November 13, a copy of which is attached to these minutes." The missing items were three in number and involved a total cost of approximately $260.

Subsequently the missing items were apparently installed, for on April 3, 1951, the board members resolved that the contract was to be "finally accepted as complete, without qualification."

Washington state statutes in effect at the time, provided that the right of mechanics, laborers, subcontractors, materialmen, etc., to bring legal action — i.e., secure a lien — on a performance bond, depended on their filing notice of their claims, within 30 days "from . . . the completion of the contract, with an acceptance of the work by the affirmative action of the board. . . ."

The Specific Issue

The specific point at issue between the litigants in this case (a supplier and the surety) involved the determination as to which acceptance resolution started the 30-day filing period. But equally pertinent, from the viewpoint of school board members, was the related issue: What are the legal aspects of acceptance of school construction work by a board of education?

In connection with this latter issue, the court opinion held that, to invoke the existing mechanics' lien statute, "acceptance of the work . . . must be final and absolute, and a conditional acceptance is not sufficient to start running of the 30-day period. . . ." The court pointed out that while it was permissable for a board to accept a contract as completed, even though as here, a small amount of work remained to be done, the acceptance resolution was still to be unequivocally absolute and final in its terms. In such instances, the opinion noted, the 30-day period would begin to run "from the date of such acceptance, in the absence of fraud in making the acceptance."

*J. J. Ferris High School, Jersey City 2, N. J.

[1] *Nat'l Blower and Sheet Metal Co. v. Amer. Surety Co. of New York et al.*, cited as 248 P.2d 547

The opinion then referred to the board resolution of November 13 and noted that its language carried no suggestion of final and absolute acceptance. On the other hand, the court was emphatic in pointing out that the language of the April resolution, "did not appear to be conditional . . . (but was, rather) . . . unequivocal and unconditional."

The court then unanimously held that an acceptance, such as that of November 13, which was conditional upon the performance of "certain, enumerated work called for by the contract" could not be considered the final and absolute "affirmative action" required of the board.

Legal Significance

It would appear that the following legal principles were established by this opinion.

1. Final acceptance of a school building constructed on contract will not be established in the absence of affirmative action by the accepting board.

2. A board's resolution relating to a final acceptance must be unequivocal and absolute; i.e., without qualification.

3. A board's acceptance resolution will not be construed as "final," when it enumerates a list of uncompleted items called for by the contract.

4. Even though a small amount of work remains to be done on a contract, a board may, in the absence of fraud, make final acceptance. In such instances, however, the acceptance resolution must be of the final type.

Further analysis suggests that, in addition to these judicial principles, this opinion also furnished several items of helpful information for board members concerned with the acceptance of contracted construction work.

1. For "final" acceptance to be legal, the board itself must take positive action — i.e., enact an appropriate acceptance resolution. While it may designate an agent, such as its architect, or a committee of its members, to make recommendations, the acceptance will lack legality unless the board itself enacts the necessary resolution.

2. Since the language of the acceptance resolution is the best evidence as to its being unequivocal and absolute, it is desirable that the wording of the resolution appearing in the board minutes be such that the type of acceptance intended — conditional or legal — is clear and evident.

3. The key words here relate to the enumerated list of uncompleted items. If an acceptance is not intended to be final, its "conditional" nature will be evident when the acceptance resolution enumerates the uncompleted items, or utilizes some other recognized listing of them. The use of a letter from the contractor in which the uncompleted items are spelled out — as was done in this case — seems highly sensible.

4. The main point for consideration here is that the "smallness" of the amount of work remaining incomplete, after the enactment of the resolution of final acceptance, is a board

(Concluded on page 91)

For Better Learning —

Planning and Equipping an Elementary Classroom

*H. W. Schmidt**

The other day I was asked to check over some plans for an elementary school building to be erected in the Middle West, and it occurred to me that some comments on the planning of an elementary classroom might be of interest to the readers of this magazine. After having examined literally hundreds of plans one gets a rather interesting viewpoint on how such planning should proceed and how the outcome should look.

At this point may I digress and give my experience with the usual course of original planning and its inception. It would appear as if the architectural designer is almost the only one who is really responsible for the planning and layout of the usual schoolroom. I have found that the administrator is rarely consulted or gives his ideas about the features of this planning. As to the opinions of the teachers — well, it just does not often enter into the picture; as consultants the teachers are on the outside in most cases. I do not refer to the construction *per se*, but to the size of the room, the use to which the spaces are put, what is required to promote the best use of the room in the educational program of the school.

I am reminded of the conversation I had with a third grade teacher in the city of S.... where a new elementary school was being planned. She had not seen the plan. So I gave her a rough sketch of the layout, and she was aghast when she found the classroom size was to be 20 by 30 ft., without any storage facilities of any kind except for a small flush-wall bookcase. "I am supposed to carry on an activity program," she said, "but how in the world am I to do this in such a small space, limited in all directions and no place to put my materials except this measly bookcase?" There you are. The construction contracts had been let so nothing could be done to correct the insufficient size of the classrooms. A little careful questioning of the architect showed that he was told to plan the school with 12 classrooms, and the like, to fit both site and finances — and that was about all. Oh yes, he had had several conferences with the school people, but as a whole it was left to him to plan as he saw fit. At that his job was fairly well done from the construction angle, except that the classroom section did not fit the educational job which the teachers were expected to do.

*School Building Consultant, Madison, Wis.

The above statements are not confined to the case cited; their portent is obvious and the experience has been repeated too many times in my many years of school planning contacts. Let us see what is really behind the whole problem of classroom layout.

The Major Plan Problems

There are at least six major problems involved in the classroom plan: (1) the size of the room, (2) its form or shape, (3) the educational program to be served, (4) the lighting, (5) the heating and ventilation, and (6) the equipment. The following statements refer primarily to schools in the northern tier of states, though most of the points are valid for any elementary school elsewhere.

The size of the classroom is dependent upon two factors: the number of children to be accommodated and the educational program. It goes without saying that the activity program calls for more space than the older conventional programs. The class size is in reality the first determining factor in planning a schoolroom, as many states regulate the floor space per pupil.

The shape or form of the classroom seems to be, at least of late, a moot question. I have before me dozens of plans and the range of shapes is very wide: some rooms are unusually long, very narrow (18 to 20 ft. wide); others are nearly square; some are angular, yes, angular, somewhat on the order of a blunted triangle. Interesting? But of that more a little later.

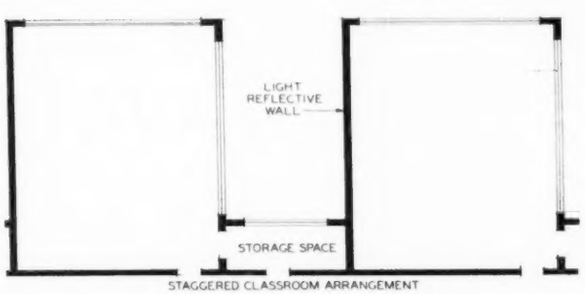
With just these two factors in mind — size and form — and without too much theorizing, and bearing in mind that the class sizes have slipped from 40 or 50 down to 25 pupils, or even less, and that the activity program is being introduced apace, we find that the old dimensions, more or less standardized at 21 by 32 ft., and giving a floor space of 14 to 18 square feet per child, are no longer adequate. In many cases, classroom floor spaces are doubled, or should one say, should be doubled. For a time the rear part of the classroom was "set off" for activity purposes, but there seems to be a tendency to do away with such segregation and to utilize the main area of the classroom for this purpose, providing more freedom in most respects — less formality in space and equipment and arrangement.

Acceptable Room Sizes

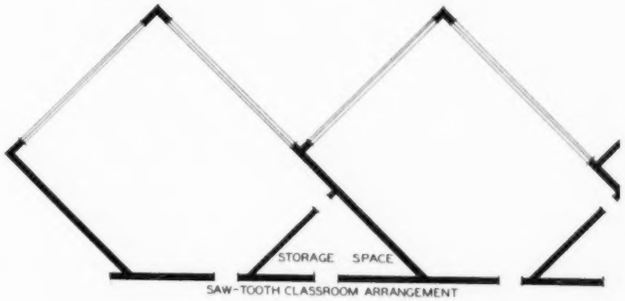
If we accept these premises then we may decide that the modern elementary classroom should be 25 ft. to 28 ft. wide and 30 ft. to 32 ft. long. Or if it fits into the general scheme of the building the classroom layout may even be square. Of course there can be no hard, fast rule about this, but in general such dimensions may readily be fitted into most plans. Again, let me repeat, if we accept the premises cited.

But such widths introduce an important problem, that of natural lighting. Many state and local building codes limit the width of classrooms to about twice the height of the window heads, as empirically the daylighting diminishes below an acceptable low in rooms with the customary unilateral windows and room heights from 10 to 12 feet. So, if we want to abide by our assumptions, we shall have to resort to some scheme to provide the lighting efficiency.

Two bilateral lighting arrangements are used in practice: (A) lighting from windows at the side and rear; (B) lighting from windows on two sides, one row of clerestory type. Unfortunately both types of arrangement have limitations. The usual classroom arrangement, in a row or lateral sequence, permits only one room at both ends of a series to have side and rear lighting. So two schemes of floor arrangement have been devised to give such lighting: The saw-tooth design and the space-staggered type.[1] The saw-tooth arrangement is a possible solution, but introduces difficulties of planning and space disposition. However, it has possibilities. The space-staggered scheme is being used in some instances and gives good lighting results, but again it causes space extensions which may interfere with economy and good planning.



STAGGERED CLASSROOM ARRANGEMENT



SAW-TOOTH CLASSROOM ARRANGEMENT

Bilateral Lighting

The (B) scheme or clerestory type of secondary lighting is becoming quite common. It consists of a row of narrow windows at the top of the inside classroom wall provided, in most instances, with directional glass blocks. However, here again we have a limitation; the scheme is applicable, as a rule, only to one story buildings. In a limited sense the arrangement may be applied to multistory structures, utilizing outside corridors with large clear glass window exposure and substituting this for the inside glass blocks. It would thus appear that the clerestory construction is finding favor, and it gives good results where applicable. Next in order is probably the space-staggered scheme, or "snag-tooth" arrangement, as one observer called it when he saw the design. As stated above, the design has both limitations and space restrictions.

The problem of artificial lighting may be dismissed here by saying that so much progress has been made with the newest type of "tube" lighting that no difficulty need be experienced in equipping schoolrooms with adequate lighting fixtures and raising the illumination from the old standard of 15 or 20 foot-candles to double this figure or higher, without undue initial outlay or operating expense.

The means of heating and ventilating the classroom may vary from gravity air changes to complete air conditioning and from panel heating to unit ventilation or what have you. The selection of a system depends on the engineer and the pocketbook of the school board.

Desks vs. Tables

Now we come to the problem of educational equipment. In the past few years we have been confronted with so many types of desks and tables, that there need be no difficulty in selecting a type which will fit the children and meet the needs of the teaching program. Aside from safe and sturdy construction, the furniture should contribute to good posture, which means movability and adjustability to the varying sizes and ages of the children in a room. The era of the fixed desk has passed, and the self-contained desk chair and even the "armchair," not to forget the individual and group table, have taken their proper place.

One difficulty about the tables is their nonadjustability. The group table has often been designated as one which contributes to group efforts and co-operation, and the like, but as one teacher found "there may be too much co-operation, not of the desired educational kind." Children will be children.

Nevertheless, it is of interest to see how the adjustable desk top has worked out; you know, the one that tilts, "to promote good reading habits and posture." A visit to several classrooms so equipped showed that the desk tops were down and the youngsters read and wrote with the tops in this position. The writer had the temerity to call one teacher's attention to this fact. She simply said the children liked the flat slant of the desk tops better. So write your own ticket! The only time we saw these desk tops up was in some formal photographs. As the politicians say, No comment!

It seems evident that movable desks seem to fill the bill, if not best, at least in a satisfactory manner. They are safe, they are movable, they make teachers and children "posture conscious"; and they are adjustable.

Color of Finishes

One other matter should be considered: the color of the desk top. As the child is confronted with this surface a good share of the school day, eyesight conservation demands that the degree of contrast between desk and task be reduced from that offered by the usual dark surface of the old conventionally colored desk. It should be added that a glossy surface is definitely taboo; a matt surface and a natural, light color are indicated and should be required. A brightness ratio between the seeing task and the adjacent surface, i.e., the desk top, should be approximately 1 to 3.

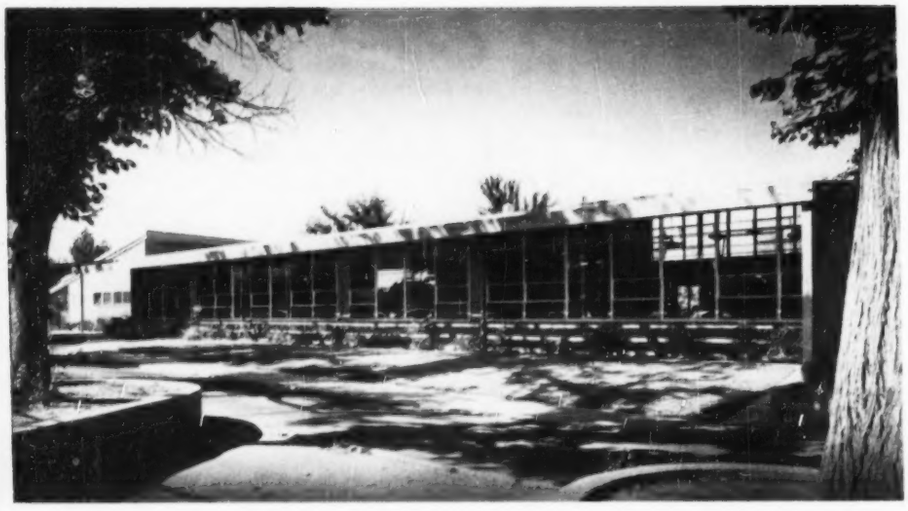
I am reminded of the terrible sight confronting me not two months ago when I found *all* desk tops in a whole school refinished in dark brown and with a high gloss varnish. Expostulation with the janitor brought forth the following: "But they certainly look slick, and I even used bar-top varnish which wears d—— well." So what could I say when confronted with BAR-TOP varnish. By the way, the principal, though not in accord with my derogatory remarks, thought the desks were not too bad and, "the desk tops could be rubbed down if that will be better for the kids." So they were rubbed down amid, so I understood, nonprintable remarks by the janitor. Tough luck after all that work with BAR ——. No, I'll not repeat that.

The Chalkboard Problem

Now how about blackboards, ouch, chalkboards? I am just a schoolman and do not like to trespass upon the "expert" and the

(Concluded on page 88)

[1]The illustrations are diagrammatic only, to show the schemes. The relative dimensions involved are purely incidental; likewise the space disposition. They are such as to give a designer plenty of latitude and scope for the use of his imagination.



Street Front, Sunshine School, Fresno, California. — David H. Horn and M. D. Mortland, Architects, Fresno, and C. T. Ternstrom, Associate Architect.

Real Sunshine in —

Fresno's Sunshine School for Spastics

The Fresno Sunshine School for Cerebral Palsied Children provides two important kinds of sunshine in the lives of unfortunate children. The building makes utmost use of that important California product, natural sunshine; the program of education provides spiritual and mental sunshine for children handicapped by cerebral palsy.

Fresno has provided special educational services for its palsied children since 1947. The new Sunshine School has now assumed these services and provides ideal physical surroundings for children and teachers and an efficient educational tool for the program of instruction.

The purpose of the Sunshine School is to help cerebral palsied children to find a place in life. A complete academic program is provided; instruction is largely individual and carefully adapted to the mental and emotional capacity of the child. Physical rehabilitation is provided to the limit of the ability of each pupil.

The loading platform is arranged for use in all weathers.

The classrooms of the Sunshine School are especially fitted to provide for the physical care as well as the academic instruction of the children.

Direct sunlight is controlled by louvers which screen out the direct sun rays.

The advanced class which has less physical involvement is carried on with some group instruction, more nearly like that of a school for well children.

Activities are strongly stressed and children are given many kinds of experiences. With the aid of parents, trips and excursions are conducted throughout the year, and music is an important subject of instruction. Children who have shown sufficient progress physically and academically, and who are emotionally stable enough to do well in a regular school are graduated to the adjacent Jefferson School.

Incidentally, the school has been found of value to educate the public and well children to see what palsy is and what can be done for palsied children.

The Building Facilities

The Sunshine School building is planned to meet the specific physical limitations of the children and to aid the specialized individual instructional program. Circulation is simple, at grade level, and all openings are of ample widths for mechanical ambulatory devices. The classrooms are planned for ten children each, large enough to accommodate wheel chairs and their equipment. Occupational therapy devices and toilets and lunch space are provided. A covered waiting and loading area is so planned that all-weather transfer of children from automobiles to wheeled equipment and, vice versa, is facilitated.

The foundations and floors are of reinforced concrete and the framing consists of steel beams and columns, with wood stud ceilings, and partitions. The exterior finish is cement plaster, and the interior is gum plywood. All ceilings are acoustical tile. The roof is built-up composition, with aluminum surfacing.

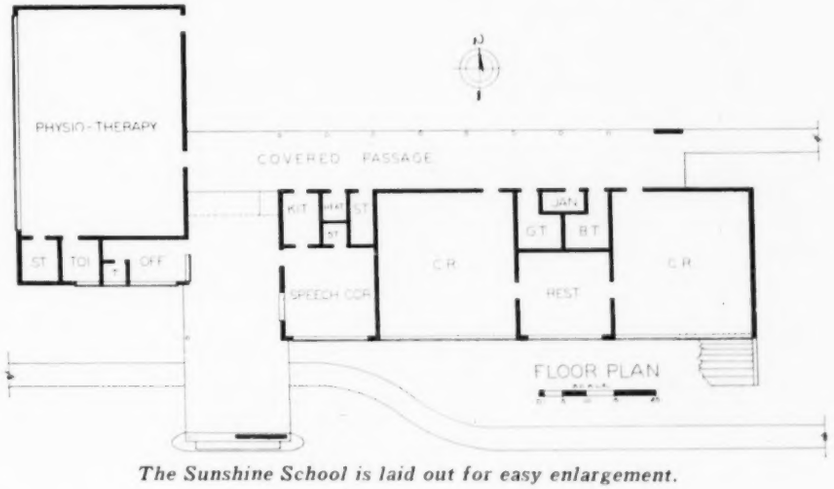
The heating is hot water, with iron pipe coils in terrazzo floors, thermostatically controlled. The electrical equipment includes a program clock, a public-address system, and intercommunicating telephone and fire alarm system. The artificial lighting is of the incandescent type in concentric ring fixtures.

The outer walls are practically all glass. Protection against the sun is provided by wooden louvers, cantilevered from the roof on the south and west sides.

In addition to the classroom toilets, there are separate toilet rooms fitted with rails to assist the children.

The building cost $152,318, exclusive of architectural and engineering fees. The cost per cubic foot was 85 cents. On the basis of a 50-pupil capacity, the cost was $110 per child.

The building was designed by David H. Horn, architect, and M. D. Mortland, associate architect, Fresno, Calif.



The Sunshine School is laid out for easy enlargement.

The American
School Board Journal
William C. Bruce, *Editor*

BUILDING SCHOOLS IN 1953

THE U. S. Departments of Labor and Commerce estimate that the total outlay in 1952 for school building construction was 1,972 million dollars. Gratifying as these figures appear, they are disappointing in the total number of seatings provided. The total shortage of classrooms is still in the neighborhood of 110,000, which is an increase over December, 1951; and reports from large and medium-size cities indicate that the wave of high enrollments due to the increased birth rate during the years 1941 to 1946 is not declining. There is a steadily increasing need for elementary schools, and the swell size of the fifth- and sixth-grade classes promises shortages in the junior high school facilities. The senior high schools in many cities have shown little or no growth in recent years due to a variety of causes, but the bulge in enrollments is certain to reach the high schools between 1956 and 1958.

The government agencies quoted above have forecast the total expenditures in 1953 for new public and private school buildings at 2,135 billion dollars, an increase of 9.17 per cent over the year just ended. Expenditures of these sums will hardly do much toward reducing the present classroom shortages. In fact, there may be an increase in the need, because a larger percentage of the construction must be devoted to junior and senior high schools. These latter types of buildings have had higher relative increases in cost than elementary schools, and there has been some expansion in the educational services, especially in shops and laboratories, which must be provided for at a higher per-pupil cost.

* * *

At the November, 1952, elections Florida, California, and Georgia voted changes in their laws which will raise the state aid to the construction of much needed school buildings. The Florida legislation is notable in that it provides a definite state tax which will enable every county to carry on enlarged building programs or, where immediate construction is not needed, to accumulate an earmarked fund for the future. California has again voted 185 million dollars in state bonds for local school construction aid, which should greatly alleviate conditions in the new industrial areas and the growing southern counties of the state.

In some states, the legislation raising the bonding ratio will enable local school districts to raise larger sums by bond issues, will do much for school construction. The permissive legislation in Pennsylvania and other states for the leasing of school buildings erected by nonprofit school construction corporations will help communities temporarily, but the plan is questionable as a permanent means of providing school plants. Greater state aid, or rearrangement of districts for higher bond capacity, is distinctly needed for solving the problems of the poorer areas. On the whole, the 1952 markets for school bonds have been remarkably good, and the fine credit standing of many school districts has contributed much to holding down the interest rate on all municipals. For the immediate future, the outlook for interest rates is still around two per cent for the districts with the highest credit rating. The recent averages of 2.20 per cent reflect the solid regard in which the schools are held by the financial interests of the country.

Much progress has been made during the past year in adjusting the thinking of architects to the advantages of structural design which will save steel, aluminum, and copper. While the shortages due to the Korean conflict have been largely alleviated, the new uses of light steel, precast concrete, cement block, and in certain areas laminated wood construction have all made for better and more permanent buildings, at costs which will never allow a return to the old wastefulness of heavy steel and solid brick.

* * *

In the over-all planning of buildings there has been some return to more conservative views on the single-loaded corridor and odd-shaped classrooms. Most of the new elementary schools use the second side of the corridors for service rooms, administrative offices, special classrooms, and such larger areas as the library and all-purpose room. Possibly the most novel departures in planning have been the huge banjo-shaped high school which New York City is erecting, and in smaller cities several "circular" elementary schools in which five hexagonally-shaped classrooms surround a central core of toilet rooms and corridor. The buildings are planned to improve lighting, to reduce corridor areas and circulation distances, to better utilize the hub area for auditorium and service rooms, and in general to save space. The large New York plan, which is reminiscent of proposals made forty years ago for circular schools, offers advantages which will be worth watching.

The U. S. Office of Education is reported to be completing the second phase of its nationwide survey of school plant facilities — the evaluation of state findings — and to be ready to offer specific suggestions for and criticisms of state and local programs of school plant rehabilitation, new construction and financing. The Office has definite average figures on school building construction costs in recent years and will be able to help school boards make much better estimates of the total classroom facilities which local funds will buy. If the expected recession occurs in industrial construction, and in certain areas, in home building, the contract conditions for school construction will be distinctly more favorable in 1953 than they have been in a decade. It seems inevitable that the federal school plant survey findings will point strongly to the need for federal aid to school building construction. Without such aid, there cannot be adequate school plant programs suited to the new, needed level of educational efficiency.

* * *

In the construction of new school buildings there seems to be no prospects of changes due to the development of new materials or novel advancements in engineering. In each of the major sections of the country, the framework of the schoolhouses has been pretty well standardized, with some inclination to choose materials that are readily available, and reasonable in first cost and maintenance. Fire safe "medium grade" would perhaps best describe the construction and finish of most school buildings, except for very large high schools and the elementary buildings in wealthier suburbs. The emphasis is, as it should be, on permanence, easy maintenance, and low repair cost.

Lighting as a problem of adjusting the classroom for good seeing and cheerful environment, seems to have approached solutions satisfactory to educators, to hygienists, and to engineers. Advocates of both clear-glass windows and directional glass blocks can point to very satisfactory test results in numerous buildings. Much progress has been made in raising the reflection coefficient of materials and colors on walls, ceilings, and floors, as well as on furniture.

The year 1953 will provide the school boards with numerous challenges for upbuilding the educational system of the country by meeting the school-plant needs courageously and without delays. The growing numbers of children and the possible leveling of costs should be kept firmly in hand. So too should the advantages of a balanced school plant program suited to the local community, based on a professional survey and carefully sold to the community through a citizens' committee and a continuous publicity plan.

Choose the Unit that Best Suits Your Needs!

Schieber, originators of In-wall folding tables and benches, now offer a second style. The economies of multiple-use-of-space are now available to all schools regardless of budget or special requirements.

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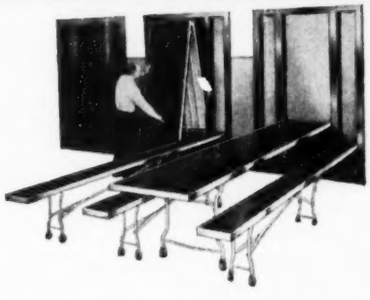

Here is genuine quality that has stood the test of time. Since 1937, more than 500 architects have specified thousands of these units in schools from coast to coast. With full knowledge of the rugged use they receive Schieber puts into their construction the best in workmanship and materials. Sound policy? Schieber IN-WALL users have no service problem.

Unless you foresee the need of detaching tables and benches from the wall, specify IN-WALL and get the extra rigidity and quality it offers as compared with detachable units.

PLYWOOD TOPS—STEEL LEGS

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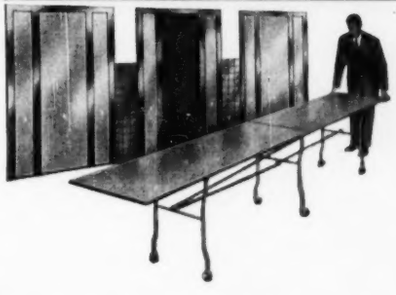
DETACHABLE FROM WALL POCKETS



This is a low cost, plywood top, version of IN-WALL, yet many of the important quality features of IN-WALL are incorporated in its design. With 15 years experience building folding tables and benches, Schieber knows exactly where strength is needed. No castings are used in Port-A-Fold and reinforcements are provided where necessary to absorb the abuse of daily operation.

If conditions require various seating arrangements or your budget is restricted, specify this unit.

If you are planning a new school or modernization of an existing building, consult SWEET'S file or write for these two catalogs and get complete details on both Schieber units. Then choose the type that best suits your needs.

SCHIEBER SALES COMPANY

a name that has always stood for highest quality in folding table and bench equipment.

ON DISPLAY — BOOTH L-4, N.E.A. - A.A.S.A. SHOW — ATLANTIC CITY — FEBRUARY 14-19

CITIZENS SURVEY REPORT

The board of education of Glen Rock, N. J., has received a report from the Citizens Planning Committee on Schools covering a survey of the city school system. This committee, comprising 50 members, has issued a 43-page report covering a two-year study of school population trends, elementary school building needs, and educational recommendations.

The report is being given wide discussion throughout the city and the school faculty is spending considerable time studying it through use of staff meetings. In addition to the citizens' report, the board has begun a study of the planning consultants' report. This report offers a comprehensive plan for the city and includes a section on educational development.

MAY SELECT BIDDER

A school board which has adequate reasons for doing so may award a contract to other than the lowest bidder, according to a decision rendered by James E. Allen, deputy state commissioner of education of New York State. In a ruling involving a central rural school board, Dr. Allen held that the education law does not expressly require that a school contract go to the lowest bidder. He said a board may give a contract to a higher bidder provided its discretion is reasonably exercised.

PUBLIC RELATIONS HELPED

At Dobbs Ferry, N. Y., the board of education is promoting good public relations through the publication of a School News Letter. The masthead is printed in the school colors — blue and white — and the text is multi-lithographed. To date, it is a two-page sheet, written in scrip paragraphs, and styled after the News Letters coming from Washington.

The News Letter is mailed to each family in the school district and serves as a direct and official communication from the board to the families of the village. It seeks (1) to inform the school patrons about their schools, and (2) it seeks to arouse interest in the schools, in their problems and accomplishments.

UTILIZE LAY COMMITTEE

Since February, 1952, the school board of Dist. 201-U, of Crete, Ill., has benefited from the services of a lay advisory committee which has made (1) a study of the curriculum needs, and (2) a study of building facilities in the high school.

The committee, representing 21 civic organizations within the district, after completing its work recommended a new senior high school building. The board is now completing plans for a school-bond election. A member of the board is present at each PTA meeting to report on the progress made in planning the building, the work of the lay committee, and other school problems.

The board and Supt. Lynn A. Wiley believe that the plan has resulted in an excellent outpouring of public opinion concerning school problems and school progress within the school district.

AUSTERITY ORDERED

An austerity program for extra-curricular activities in the high school has been ordered by the school board at Bogalusa, La., which has assumed the control of funds allotted to such purposes. In this direction, the athletic fund, the band fund, and miscellaneous funds will be combined. The purpose is to operate these activities from a single financial base and to pay off an old indebtedness of $9,685 incurred by the athletic department several years ago.

BACK TO SCHOOL FOR PARENTS

A-student-for-a-night was the experience of parents and other people of the community at Livingston, N. J., when they found themselves cast in the role of their children.

Large tables, supplied with the necessary materials for working with various mediums of art filled the auditorium of the junior high school. Supervising each table was a teacher who acted as instructor or leader. The projects to be worked on ranged all the way from finger painting and cartooning to ceramics and designing. Guests were assigned to a particular table and given instructions from their teachers.

Many budding artists were found among the parent students. It was the opinion of the group that a better understanding of the work the pupils were engaged in had resulted from the workshop. Parents were of one accord that their "back to school" session had made them wiser and more appreciative.

CINCINNATI BETTERS PRINCIPALSHIPS

The board of education of Cincinnati, Ohio, has adopted a new formula for the assignment of elementary school administrators on the basis of the average pupil membership.

A school with 300 or fewer pupils will have an assistant principal-in-charge with half-time teaching. A school of 301 to 450 pupils will have an assistant principal with full-time administration. A school with 451 to 750 pupils will have a nonteaching principal with no assistant. A school with 751 to 1000 pupils will have a nonteaching principal and an assistant principal carrying a half-time teaching assignment. A school of 1001 or more pupils will have a nonteaching principal and a nonteaching assistant principal. The purpose is to change the former practice of assigning a principal in charge of more than one building by placing assistant principals in charge of small schools.

The plan provides each school with a single school administrator responsible for the administration of the school and for facilitating its closer integration with the community. It also permits assistant principals to handle greater responsibilities and to grow in their capacities in this field.

TELEVISION AND THE SCHOOLS

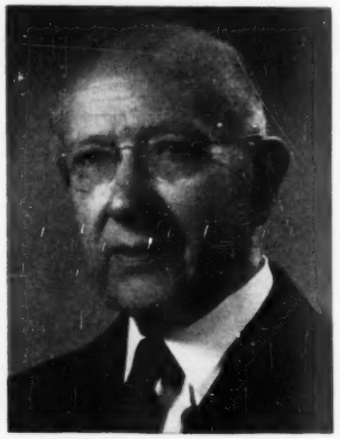
Supt. Leon N. Neulen, of Camden, N. J., in his annual report to the board of education for the year 1952, calls attention to the findings in a study of the effects of television on school children. The findings include seven questions and answers which are interesting and enlightening.

1. How do children who have television sets at home compare with other children in school achievement?

School learning is not affected by television as far as standardized subject matter tests reveal.

GIVE AWARD FOR SERVICE

One of the highest honors available to a school board member was bestowed on November 3, at Syracuse, N. Y.; to Charles A. Upson, a Lockport industrialist.



Charles A. Upson
Member, Board of Education, Lockport, New York.

The distinguished service award of the New York State School Boards Association was presented to Mr. Upson by Dr. Lewis A. Wilson, Commissioner of Education, in Syracuse, before one thousand school board members at the Association's annual banquet.

In presenting the award, Dr. Wilson cited Mr. Upson's service in Lockport. He said that all elementary school buildings have been replaced by modern, efficient buildings, and two junior high schools have been constructed. He commented on the fine leadership qualities of the recipient in promoting public library facilities over a 30-year period. Mr. Upson is a trustee of the New York State College of Forestry and a member of the State Commission on School Buildings.

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2. Do children having sets at home do better work when parents closely control their televising?

Parental control over children's viewing habits does not appreciably affect their school achievement in reading and arithmetic, based on standardized tests.

3. Do children with television sets stay up longer than those without?

Yes, children who have television sets at home stay up longer at night.

4. What is the average number of hours a day that a child spends in watching television?

Nearly 4 hours on school days and about 5½ hours on Saturdays and Sundays.

5. What is the percentage of parents who do not concern themselves with what children watch on television?

Fifty-two per cent of the children indicated no parental concern with what they watch.

6. What are the 12–13-year-old child's favorite programs?

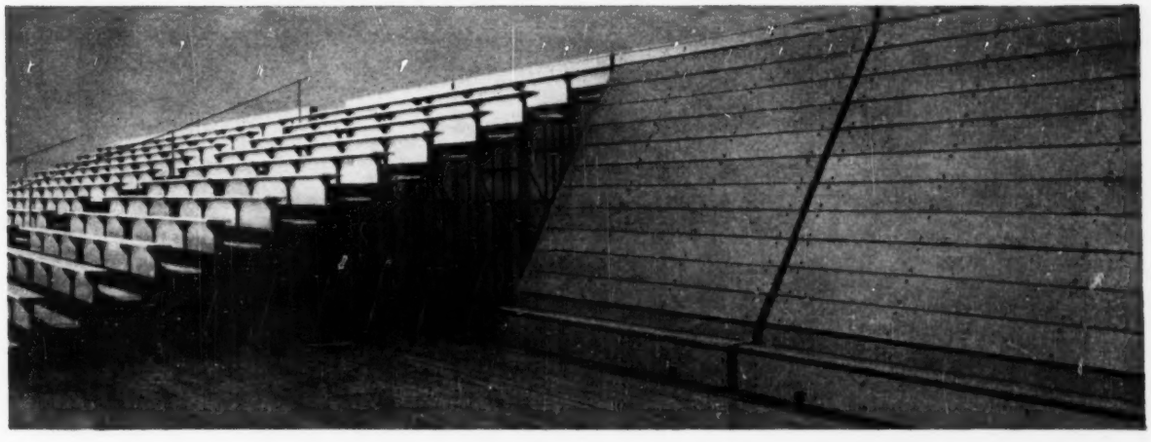
Milton Berle's and western programs. Seventy to eighty-six children out of a hundred watch these programs regularly. Mystery and crime programs are next.

7. Do children watch wrestling and boxing?

Yes, they do — about one out of six youngsters usually are inside watching wrestling.

Think of Spectators' *Comfort*

When Selecting Your Gymnasium Stands



Universal Roll-A-Ways Provide More Leg Room Than Any Other Leading Stands

When selecting or specifying gymnasium stands, it is quite natural for you to favor those which provide maximum seating in minimum space. But what about the spectators? Are you considering their comfort? Cramped seating facilities don't encourage big turn-outs for basketball games or other events.

However, this need not be a problem. With *Universal* Roll-A-Way Stands you can meet all demands . . . for comfort as well as maximum seating in minimum space.

Thanks to improved design and construction, Roll-A-Ways provide more leg room than any other leading stands. The extra distance from seat board to foot board (18½") and the centered position of vertical filler board beneath the seat permit every spectator to keep his feet and legs in normal position (illustrated at right). Continual comfort is assured.

Universal Roll-A-Way Stands are engineered to individual specifications, fit any space, and afford perfect visibility. When not in use, they may be rolled back to the wall, opening approximately 70% more floor space for regular gymnasium activities. They are ideal for large capacity or small; neat and attractive; exceptionally strong and safe.

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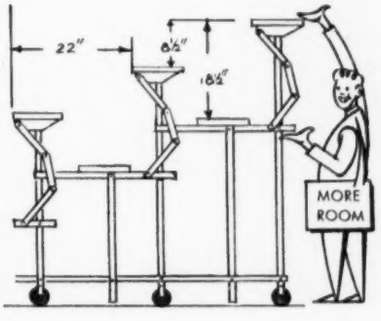

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PHILADELPHIA SALARY INCREASES

The Philadelphia, Pa., board of education has proposed a $400 increase in the maximum salaries of teachers. The increase was recommended by the board's business committee of which William H. Loesche is chairman. The action was a compromise between the board's earlier proposal for a $200 increase and teachers' petitions for from $600 to $900 more a year.

The increase is now $400 across the board. All the school system's 8000 teachers have received $200 of the increase, effective January 1.

Sixty per cent of the teachers, now at the present maxima, will have a second raise of $200 in the salary ceiling as of September 1, 1953. The 40 per cent who are not yet at maximum will then receive their regularly scheduled $200 increment.

Percentage-wise, 80 per cent of the total budget will go to salaries and the board's contribution to the state retirement fund and group insurance. Thirteen per cent represents textbooks, supplies, fuel, and other operating expenses, while the remaining 7 per cent is for debt service.

CLEVELAND RAISES SALARIES

The Cleveland board of education has moved to grant its employees, including 3500 teachers, new salary schedules, effective January 1, 1953. By unanimous vote the board has authorized the system's three administrative heads, Supt. Mark C. Schinnerer, Clerk-Treasurer Michael Wach, and Business Manager Edmund F. Smircina, to prepare the necessary legislation to put such raises into effect.

This latest move, which would give teachers a minimum pay of $3,500 and a maximum of $6,000, followed passage by the Cleveland electorate, at the November 4 election, of a 9.5-mill levy. Granting of new schedules had hinged on the success of that levy, which was of such importance to the Cleveland system that if it had failed the whole financial operations of the schools would have come to a stop after June, 1953.

The pay raises, when they come, will cost the school board $2,100,000 the first year.

TEACHERS' SALARIES

► The Bexley, Ohio, city board of education has adopted new teachers' salary schedules for 1952–53. The new schedules, which are the result of the passage of a 3-mill tax levy, provide for minimums of $3,300 and $3,500 for beginning teachers holding a bachelor's and a master's degree. The maximums go to $5,400 and $5,700 at the end of 15 years, for holders of a bachelor's or master's degree. An extra payment of $200 is provided for the completion of 32 semester hours of professional study beyond the master's degree.

► New Orleans, La. The Orleans parish school board has given its 3200 regular school employees a 10 per cent cost-of-living pay increase for 1953. The increase, to cover two years, amounts to a total of $1,920,000.

► Peterborough, N. H. The school boards of Jaffrey and Dublin have given a salary increase of $6.67 to teachers earning credits for professional courses approved by the superintendent. The increase is not in the form of a bonus, but is given as an addition to the present contractual salary.

► Supt. Warren M. McCartan, of Gibson City, Ill., has begun the study of a proposal for a revised salary schedule for 1953–54. He is also planning the preparation of a *Handbook of School Policies*, to include all the policies which have been established for the administration of the schools.

COMING CONVENTIONS

Jan. 7–8. Tennessee School Boards Association, **at Andrew Jackson Hotel, Nashville. Secretary: W. A. Shannon, 225 Memorial Building, Nashville. Exhibits: Mr. Shannon. Attendance: 300.**

Jan. 12–13. Nebraska State School Boards Association, Inc., **at Cornhusker Hotel, Lincoln. Secretary F. H. Gorman, University of Omaha, Omaha. Exhibits: Mr. Gorman. Attendance: 350.**

Jan. 23. Oklahoma State School Boards Association, Inc., **at Huckins Hotel, Oklahoma City. Secretary: H. E. Wrinkle, Faculty Exchange, Norman. No exhibits. Attendance: 300.**

Jan. 25–27. Louisiana School Boards Association, **at Washington Youree Hotel, Shreveport. Secretary: Fred G. Thatcher, Box 8986 University Station, Baton Rouge. No exhibits. Attendance: 500.**

Feb. 14–19. American Association of School Administrators, **at Atlantic City Municipal Auditorium. Secretary: Dr. Worth McClure, 1201 16th St., N.W., Washington, D. C. Exhibits: Dr. Karl H. Berns, Assistant Secretary. Attendance: 15,000.**

Feb. 22–23. National School Boards Association, **at Statler Hotel, St. Louis. Secretary: Edward M. Tuttle, NSBA, 450 E. Ohio St., Chicago. No exhibits. Attendance: 600.**

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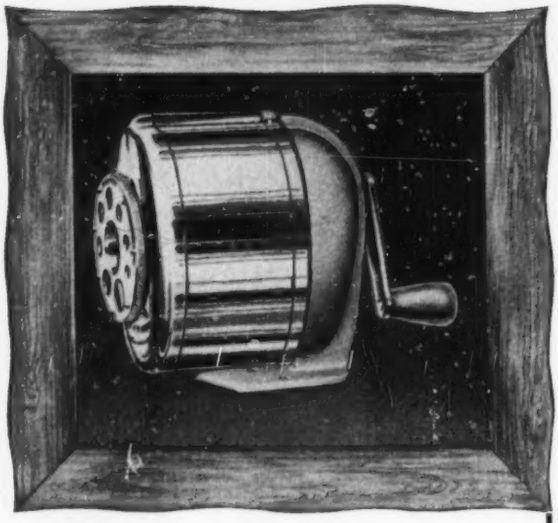

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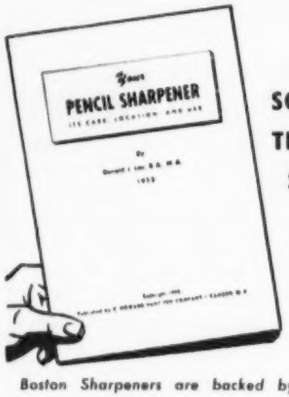

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School districts in Kentucky are creatures of the state legislature, which has the power under the state constitution to alter them or even do away with them entirely. Ky. constitution, §183. — *Board of Education of Fayette County* v. *Board of Education of Lexington Independent School Dist.*, 250 Southwestern reporter 2d 1017, Ky.

A North Carolina county board of education did not abuse its discretion in consolidating school districts, where the reasons for the consolidation were largely practical, and the reasons for maintaining districts separately were chiefly sentimental. G.S. 115-99. — *Gates School Dist. Committee* v. *Board of Education of Gates County*, 72 Southeastern reporter 429, 236 N.C. 216.

School District Government

An Ohio county board of education is without the authority to employ teachers, but is limited to the employment of executives or administrative officers who may be hired even though they do not hold certificates to teach. Ohio general code, § 4857-1. — *State ex rel. Saltsman* v. *Burton*, 108 Northeastern reporter 2d 110, 91 Ohio App. 271, affirmed 103 Northeastern reporter 2d 740, 156 Ohio St. 537, Ohio App.

Massachusetts school committees have general charge of public schools and have full power to make reasonable and proper contracts with teachers and to fix their pay, but all of their acts must be within the authority committed to them, and must bear some rational relation to the furthering of the objects for which the committee exists. G.L. (Ter. Ed.), c. 71, §§ 37,38. — *Cotter* v. *City of Chelsea*, 108 Northeastern reporter 2d 47, Mass.

Employment of Teachers

The Cleveland city school district board of education did not illegally expend money, exceed its powers, nor deprive its employees or prospective employees of any rights, constitutional or otherwise, by requesting its present employees to take oaths that they were not Communists or members of organizations advocating violent overthrow of the government, in the absence of evidence of violation of individual liberties guaranteed by the constitution, personal restraints, deprivation of civil or political rights, or disqualification from pursuits of lawful avocations, so that an injunction against the board's expenditure of school funds in the administration of a loyalty oath program was properly denied. Ohio const. art. 1, § 1, 11; U.S.C.A. const. amend. 14. — *Dworken* v. *Cleveland board of education*, 108 Northeastern reported 2d 103, appeal dismissed 102 Northeastern reporter 2d 253, 156 Ohio St. 346, Ohio App.

A dependency allowance granted by the school committee to married teachers, who were the sole support of a husband, wife, or children, was justifiable and valid in view of a reasonable belief that the more mature, experienced, and competent teachers are those most likely to be married and have dependents, and that the allowance would have effect in the long run of securing and retaining teachers of that type, and accordingly, the city was required to make appropriations to pay such allowance. G.L. (Ter. Ed.) c. 71, § 34, as amended by the Mass. statutes of 1934, c. 294, § 40, as amended by the statutes of 1949, c. 684. — *Cotter* v. *City of Chelsea*, 108 Northeastern reporter 2d 47, Mass.

The terms "teacher" and "superintendent" are not interchangeable; the term "teacher" in the Ohio state teacher's tenure act providing for continuing contracts, means a classroom teacher, not a school system executive or administrative official. Ohio general code, § 4842 *et seq.* — *State ex rel. Saltsman* v. *Burton*, 108 Northeastern reporter 2d 110, 91 Ohio App. 271, affirmed, 103 Northeastern reporter 2d 740, 156 Ohio St. 537, Ohio App.

Teachers' Pay

The Massachusetts "equal pay law" relating to school teachers' salaries, has as its purpose to secure general equality between men and women teachers in matters of pay, but is not intended to prevent differentiation among teachers based upon classifications which the school committee could reasonably and lawfully make, whether or not based upon grade, type of work, preparation and training, so long as they are not discriminatory between the sexes. G.L. (Ter. Ed.) c. 71, § 40, as amended by the Mass. statutes of 1949, c. 684. — *Cotter* v. *City of Chelsea*, 108 Northeastern reporter 2d 47, Mass.

► ROY E. HOLMES, of Milford, Ky., has accepted the superintendency at Wilmington, Ohio. He succeeds James M. McDonald.

► J. H. FLEY has been elected superintendent at Milford, Ky., to succeed Roy E. Holmes.

► GEORGE ROBINSON has accepted the superintendency at Hazel Park, Mich.

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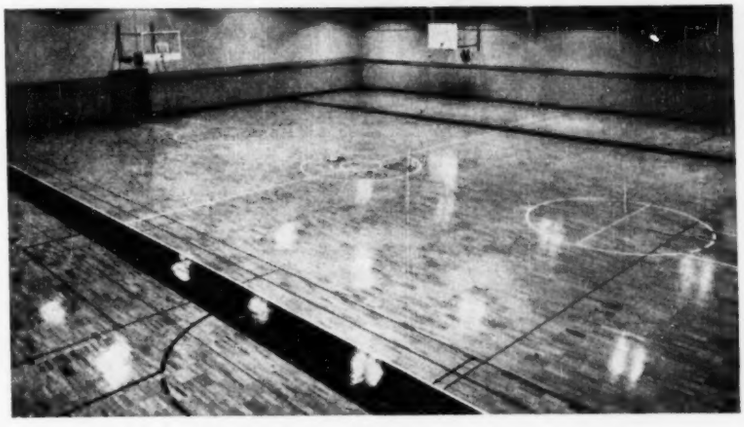

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A.A.S.A. IN ATLANTIC CITY

Education for Security Topic

The National School Boards Association will cosponsor five discussion groups highlighting problems of policy making, finance, school construction, and community support at the week-long 79th annual convention of the American Association of School Administrators scheduled for February 14–19 at Atlantic City, N. J.

Along with 15,000 delegates, school board members will hear addresses keyed to the convention theme "Education for National Security" by UAW-CIO Chieftain Walter P. Reuther, by Ralph J. Bunche, director of the UN's Department of Trusteeship; by Frank W. Abrams, chairman of the board, Standard Oil Company of New Jersey, and by Cartoonist Al Capp of the United Feature Syndicate, Inc.

According to AASA President Virgil M. Rogers, superintendent of schools, Battle Creek, Mich., further variations on the education-national security theme will be outlined by speakers drawn both from lay and professional ranks.

NSBA, in co-operation with AASA, will begin its series of discussion groups Monday, February 16, when Martin Essex, superintendent of schools at Lakewood, Ohio, leads a meeting on "The School Board and Its Printed Policies."

Teaming up that same day with the National Council of Chief State School Officers and the Committee on Tax Education and School Finance of the National Education Association, NSBA will sponsor a meeting on "The Future of Local Sources of School Support" which will have as its chairman Glen T. Goodwill, superintendent of schools, Monterey, Calif.

The School Building Architectural Exhibit which annually demonstrates up-to-the-minute developments in school planning is slated to unveil plans, photographs, and models of school buildings that have been constructed since 1948 or are now in the process of construction. School building specialists will be on tap to explain these exhibits which are sponsored by AASA, and the American Institute of Architects.

Another major attraction will be the colorful and elaborate commercial displays of schoolbooks, supplies, and equipment, sponsored by more than 350 firms and organizations which will help make the 1953 exhibit the world's largest educational trade show.

Delegates will have opportunities to relax from the stiff round of meetings, discussions, speeches at the "Friendship Hour," the numerous State Breakfasts, and College Dinners. Other lighter touches will come from these musical organizations: Paul Lavalle and the Band of America and the Angelaires Harp Ensemble, both presented by the Associated Exhibitors.

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SCHOOL FINANCE AND TAXATION

SCHOOL FINANCE

► The Louisiana State Board of Education, on November 25, approved a 22 million dollar appropriation for the state's public schools during the 1952–53 fiscal school year.

The allotment includes 7 million dollars to cover the 10 per cent cost-of-living bonus approved by the legislature, and 15 million dollars to help meet minimum salaries set by the legislature.

Orleans parish, in New Orleans, will receive $960,584 toward the cost-of-living bonus, and the school board will receive $425,303 to meet the minimum salary standards.

► State Supt. Roy E. Simpson, of California, in a recent statement, declared the cost of education for the state's schools for the current 1952–53 year is $261,796,121, or an increase of $35,470,586 over the 1951–52 cost. This is a minimum and does not include additional apportionments which may be necessary due to the growth in pupil attendance during the year. The average daily attendance in schools rose by 120,000 pupils over the last year.

SCHOOL BOND SALES

During the month of October, 1952, sales of $121,209,000 in school bonds were reported.

The largest sales were in California, $29,422,000; in Illinois, $7,759,000; in Maryland, $7,600,000; in Michigan, $5,807,000; in New York, $9,402,000; in Pennsylvania, $26,647,000; in Tennessee, $5,588,000; in Texas, $6,210,000.

The average yield of bonds, as of November 1, was 2.38 per cent.

MUNICIPAL SCHOOL EXPENDITURES

The U. S. Department of Commerce, in a summary of city government finances for 1951–52, reports that 481 cities having more than 25,000 population, expended in 1951 a total of $800,366,000 for education. This amounted to $12.92 per capita.

The expenditures in cities of 1,000,000 or more amounted to $287,459,000, or $16.52 per capita.

ACTIVITIES CINCINNATI SCHOOL SYSTEM

With the opening of the new school year 1952–53, the public schools of Cincinnati, Ohio, are giving their 125th year of service to the community. A recent report reflects the progress and the changing local situation. The schools found themselves this fall with an all-time high enrollment of 63,949. The kindergarten enrollment showed the greatest gain with 7917, or an increase of 1863 over 1951.

Confronted with a rapidly increasing enrollment and mounting operating costs, the board of education submitted to the voters in November, a request for one and one-half mills additional tax levy for five years, to become effective January 1, 1953.

During the summer, the board approved a budget of $17,327,672 for 1953, the highest in its history. The estimated income for 1953 will be $15,685,226, which is $1,642,446 less than the budget, a fact which forced the board to ask for an additional tax levy.

A few months ago, the board set up a new salary schedule for civil service employees, and provided increases to bring the salaries paid as closely as possible up to those paid by the city for similar kinds of work. The single-salary schedule provides a minimum of $3,000 and a maximum of $5,200, with increments of $150 and $175. The additional tax levy will provide increases ranging from $3,200 minimum to $5,400 maximum.

GROWTH RECORDED

Wayne township, in Mountain View, N. J., a rapidly growing community of the New York Metropolitan area, reports that its enrollment has doubled within the past five years, and that it is expected to exceed 4000 pupils by 1956. To meet the enrollment increase, the board has floated five bond issues since 1947, and has constructed 54 classrooms, at a total cost of $1,712,000.

Plans are now under way for the construction of another 13-room elementary school, to cost an estimated $350,000. The board is erecting a small community-center type of school, comprising a kindergarten, 12 classrooms, and an all-purpose room. These schools located in centers of population are expected to result in considerable financial savings in transportation. The board has this year established a new high school for the district.

Kenneth A. Woolf, superintendent of schools, has been in charge of the educational planning.

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ATLANTIC CITY
Feb. 14-19, 1953

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- Theodore Roosevelt High School, Williamsport, Pa.
- Myers Park High School, Charlotte, N. C.
- Ohio State University, Columbus, O.
- Sayre Jr. High School, Philadelphia, Pa.
- South High School, Akron, O.
- Southern High School, Okolona, Ky.
- University of North Carolina, Chapel Hill, N.C.
- University of Pennsylvania, Philadelphia, Pa.
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- Wilkes General Hospital, Wilkesboro, N. C.

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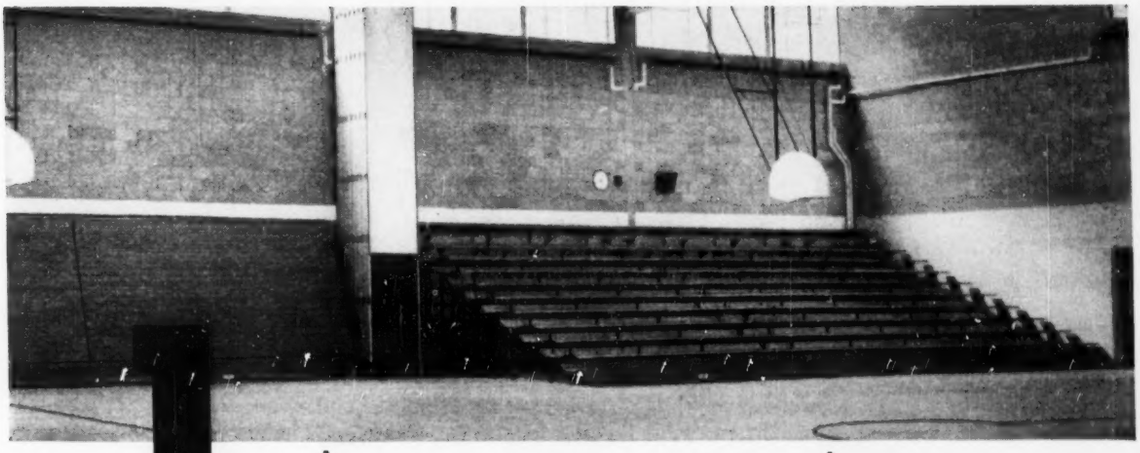

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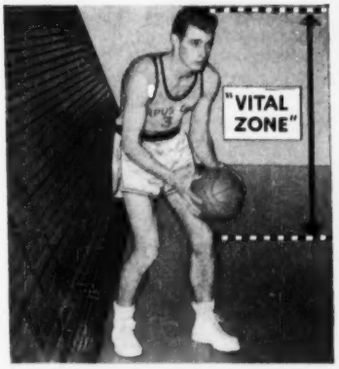

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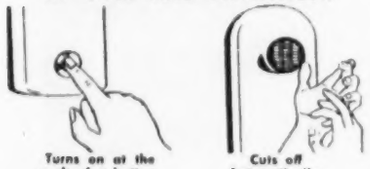

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PERSONAL NEWS

DR. PROSSER PASSES ON

Dr. Charles A. Prosser, lifelong leader in vocational education in the United States, died in Minneapolis, on November 26, at the age of 81. He first came into national prominence as an advocate of vocational education when he was active as secretary of the National Society for the Promotion of Industrial Education (1912 to 1915) and as the first director of the Federal Board for Vocational Education (1917 to 1919).

A native of New Albany, Ind., Dr. Prosser attended DePauw University. From 1900 to 1908 he was superintendent in his native town. In 1915 he received his doctor's degree from Teachers College, New York. In the same year he was appointed director of Dunwoody Institute, at Minneapolis, Minn., and this post he held until his retirement in 1945.

The greatest service of Dr. Prosser's life was leadership in securing the passage of the Smith-Hughes Law and in aiding the states to accept the federal aid. His services were widely used for the establishment of vocational courses and schools and the improvement of federal and state laws. In recent years he was the author of the Prosser Resolution for the improvement of secondary education for the 60 per cent of young people whose interests and abilities do cause them to see no benefits in education leading to college or a highly skilled occupation.

SUPERINTENDENTS

► CARL W. BRAUTIGAN, of Vermontville, Mich., has become superintendent of schools at Belding.

► FRED L. BIESTER has entered upon his 35th year as principal of the Glenbard township high school at Glen Ellyn, Ill. DAVID MILLER has been employed as administrative assistant.

► I. M. ROHLING, of Hixton, Wis., has been appointed superintendent of joint school dist. No. 1, of Price County, Phillips, Wis. He succeeds Walter Ploetz, who has gone to the Platteville schools.

► DR. GUY SNAVELY, executive director of the Association of American Colleges, will retire in June, 1953.

► PERCIVAL M. BLISS and CLAUDE M. RUPEL have been appointed as field representatives in the division of public school administration of the California State Department of Public Instruction. MRS. ESTER KATHRYN NELSON has been appointed consultant in elementary education for the state department.

► DR. GEORGE B. SMITH, formerly dean of the University of Kansas School of Education, has been appointed dean of the University. DR. KENNETH E. ANDERSON has been appointed dean of the School of Education, to succeed Dr. Smith.

► GEORGE E. REIMER, of Bismarck, Ill., has accepted the position of superintendent of the grade school at Prophetstown.

► WESLEY T. WOOLEY, of Galesburg, Ill., has been appointed superintendent of schools for the Galesburg Community Unit School Dist. No. 205.

► WALTER E. SNYDER has been elected superintendent of schools for the Salem School Dist., Salem, Ore.

► CLARENCE MACKEY, of Soldier, Mo., has accepted the superintendency at Centralia.

► C. HERMAN GROSE, of Harrisburg, Pa., has been appointed president of the State Teachers College at California, Pa. He was formerly assistant state superintendent.

MR. STEEN OPENS OFFICE

M. Markle Steen, for more than thirty years architect and chief of building operations for the Pittsburgh, Pa., board of education, who retired during the summer of 1952, has opened an office as a registered architect and school consultant at 607 Delafield Road, Pittsburgh, Pa.

In addition to giving personal consulting service to boards of education, Mr. Steen is a member of the firm of Regamount, Steen, Rowan, and Roach, Associated Architects, Pittsburgh.

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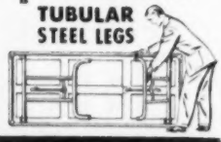

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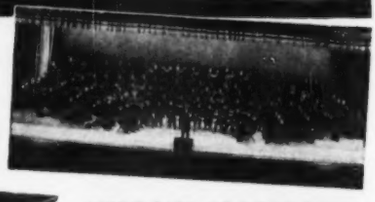

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NEW PUBLICATIONS for School-Business EXECUTIVES

Guide for Planning the Construction of School Buildings

Compiled by Frank W. Horne and Paul E. Farnum, under the direction of Hilton C. Buley, Commissioner of Education. Paper, 118 pp. Published by the State Department of Education, Concord, N. H.

This guide, the first to be published by the New Hampshire State Department, is designed to give local boards, citizens' committees, superintendents, architects, and builders the essential information for initiating, planning, and carrying through programs for new school plants and the remodeling and educational modernizing of old plants. Successive chapters provide specific information based on New Hampshire conditions: (1) state and local aid available to school boards and their executives in planning and financing a building program; (2) general procedures in planning a schoolhouse; (3) selecting an architect and utilizing his services to the best advantage; (4) presenting a school plant program to the public for favorable support; (5) the building program by the pay-as-you-go or building-reserve plan; (6) the financing plan or the issuance of bonds; (7) the selection of a suitable site; (8) current trends in school building design and plan; (9) safeguarding health by (*a*) better lighting, (*b*) water supply, (*c*) waste disposal, (*d*) warming and ventilation; (10) building safety into a new schoolhouse; (11) specific planning of the instructional rooms, administrative units, service areas, and other rooms; (12) service areas, and other rooms; (13) dedication of new buildings. Considerable legal information on the powers and duties of school boards is included. The book is a real contribution to the literature of good school planning.

The Report of the School Building Survey at Oak Ridge, Tennessee

Paper, 118 pp. Published by the Oak Ridge Schools, Oak Ridge, Tenn.

The present exhaustive school-plant study is based on the existing population of Oak Ridge, an evaluation of the existing plant in relation to building needs, and the utilization of the school plants. The city contains many potentialities for future growth in industrial resources; a master plan indicates a city of approximately 50,000 people, and this points to the need for added school facilities in the future. The recommendations call for the replacement of five elementary schools, the construction of a new junior high school, the correction of safety hazards, the improvement of four schools, the addition of six rooms at the Woodland School, the erection of five school units of 12, 14, and 25 classrooms, and the completion of cafeterias in three schools. The material includes a series of spot maps showing the school population and a list of all schools divided into three categories, including temporary types, semipermanent types, and more recent, permanent types.

The ABC's of Local School Districts in New York State

By J. R. McGovern. Paper, 21 pp. Published by the New York State Department of Audit and Control, Albany, N. Y.

The author points out that publicly financed education is an investment in democracy. Education in New York State is solidly established in the minds and hearts of the people; school districts are carefully organized on the community basis and have a sound economic background of property taxation and state aid. School bonds are voted by strong majorities and payment of both principal and interest is guaranteed by long established legislation and public support. The financial picture is most attractive and for that reason the bonds of central districts as well as of city boards of education are sound securities. The booklet is unique and suggests a means which other states might adopt to more effectively support the financing of local school systems.

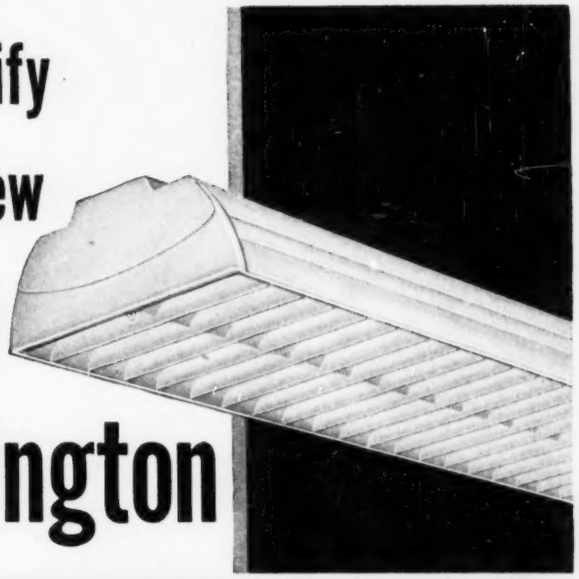
School Planning Conferences, 1952

Paper, 89 pp., $5. Published by Stanford University Press, Stanford, Calif.

This report, the work of a large number of people over a period of several months, offers a wide variety of material concerning educational criteria for school building planning, including daylighting, artificial lighting, color, furniture and equipment, thermal environment, and relations of administrators and architects. Much of the material presented was gathered during the course of the summer program in the presentations, demonstrations, and discussions at the Stanford School of Education. It includes photographs, drawings, typical layouts, and a flow chart of building projects.

(Continued on page 84)

specify the new miller Lexington



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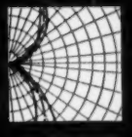

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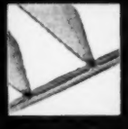

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American School and University, 1952–53

Vol. 24. Cloth, 424 pp., $5. American School Publishing Corporation, New York 16, N. Y.

The twenty-fourth edition of this useful volume, containing information about the planning, construction, and equipment of educational buildings. It includes an editorial index of authors, an index by subject classifications, and an index to advertisers.

Continuous Planning and Building Program for the Orleans Parish School Board

Paper, 54 pp. Orleans Parish School Board, New Orleans 12, La.

In this report, Architect Charles R. Colbert and his associates emphasize three activities in which they are engaged: (1) the maintenance of the existing school plant for educational efficiency, safety, and architectural beauty; (2) the planning and construction of immediately needed school buildings suited to the growing educational program of the Orleans parish schools; (3) a long-range planning of the school plant to properly meet the problems of a changing population, major reorganization of the educational program, and changes in the fiscal situation of the school district.

The present report, which is highly technical and supports all of the recommendations and immediate proposals by statistical data, maps, and social-science projection methods, sets a new high standard for school and community planning. Some of the proposals, for example, the projected village and the plans for the Oak Park Elementary School, are distinctly the products of courageous planning and long-range anticipation of social and educational progress. The report is worthy of wide study.

School Design

Prepared by the Division of School Planning, John L. Cameron, director. Paper, 68 pp. Published by the State Department of Public Instruction, Raleigh, N. C.

This book is intended to help local school authorities and their architects to solve school plant problems growing out of enlarged enrollments or the necessity of replacing obsolescent buildings.

The book provides a specific guide for helping school authorities study (1) the patterns of school activity which must be housed in a total school plant; (2) the organization of the activities within the proposed building and on the surrounding school grounds; (3) suggestions for studying the basic potentials in various school-site conditions; (4) data for planning and designing the building proper and for assuring the effective use of each unit in relation to all other units and to the school organization as a whole.

The material includes specific data of acceptable room sizes, number and distribution of special types of fixtures and built-in equipment, heating, lighting, and basic construction. The data are all presented in extremely simple form with significant illustrations.

Baltimore's New Schools

Paper, 11 pp. Published by the Department of Education, Baltimore, Md.

A progress report on the building program, begun in 1946 and just now being completed. The report shows six buildings, completed at a cost of $7,418,869, and permanent additions to buildings, completed at a cost of $3,914,016. In addition, a number of buildings have been purchased and converted to school use, several prefabricated buildings have been erected, and new school sites purchased. A total of 11 buildings are under construction, and several projects are still in the hands of the architects. These new school facilities are needed due to a large increase in the enrollment and the anticipation of further increases in the next six-year period.

Relation of Visually-Centered Activity and Certain Types of Chalkboards

By Darell Boyd Harmon. Paper, 19 pp. Published by the author, at Austin, Tex.

This preliminary study was aimed to determine areas of chalkboard contrast, and of chalkboard color. The study also sought to investigate all colors and contrasts of chalkboards. The data indicate that in sustained, visually centered activity, low contrast between chalk and chalkboard is more advantageous than is high contrast. "Least accommodative effort" was found in 75 per cent of the subjects, while fixating on low contrast chalkboards. Twenty-five per cent attained "least accommodative effort" with either high or low contrast boards.

The data also shows that "least accommodative effort" can be obtained in 90 per cent of the subjects when the chalkboard is colored green instead of black, and yellow chalk is used on the board. Only 10 per cent of the subjects showed "least accommodative effort" with the use of white chalk on a black chalkboard.

The greatest disadvantage was found with chalkboards of "normal" contrast — that is, chalkboards on which a dark chalk or crayon is used on a light chalkboard.

Data to Be Furnished Architects

Bulletin 15, 1952. Price, 25 cents. The Association of School Business Officials, Kalamazoo Building, Kalamazoo, Mich.

This outline of minimum data to be furnished to the architect by a board of education, in connection with school building projects, has been prepared by a committee of architects and school business executives, under the chairmanship of Thomas J. Higgins, Chicago.

The questions asked are basic and the information demanded is absolutely essential. At some future time the committee should work out a more complete questionnaire and go into more detail concerning the several instructional areas and service rooms of school buildings.

Geometry of Classrooms as Related to Natural Lighting and Natural Ventilation

By William W. Caudill and Bob H. Reed. Paper, 53 pp. Report No. 36 for July, 1952. Published by the Texas Engineering Experiment Station, College Station, Tex.

This useful research study is arranged in three parts: Part One is a general discussion of classroom geometry and testing methods; Part Two contains the reports of specific tests relating to the geometry of the classroom; and Part Three is an analysis of nine classroom shells, including test results, comparative analysis, and research for better buildings.

One Step for Today for Two Schools Tomorrow

Compiled by Victor C. Nickles, Supt. Paper, 8 pp. Published by the board of education, Woodbridge, N. J.

A brochure giving a brief but comprehensive review of the building programs of the Woodbridge school system, offering an adequate solution. The booklet offers the basic facts of the problem, including population, birth trend, estimated future enrollments, financing of the program, proposed method for paying the bond issue, and the cost to homeowners.

School Salary Schedules in Urban Districts Over 200,000 Population

Bulletin for October, 1952. Paper, 10 pp. Research Division, National Education Association, Washington 6, D. C.

This tabulation as of October, 1952, provides a working basis for a review of existing salary schedules.

Television in Education

Compiled by Robert Steetle. Paper, 35 pp. Published by the American Council on Education, 1785 Massachusetts Ave., N.W., Washington 6, D. C.

A summary report of the Educational Television Programs Institute, held at Pennsylvania State College in April, 1952. The bulletin takes up (1) the challenge of television, (2) its use in education, (3) the six steps in developing educational television, (4) action at the regional and national levels.

Annual Report of the Federal Security Agency, 1951

Compiled by Earl James McGrath, Commissioner of Education. Paper, 42 pp., 20 cents. Superintendent of Documents, Government Printing Office, Washington 25, D. C.

The annual report of the Commissioner of Education, presented to the federal security administrator Oscar R. Ewing. The pamphlet takes up the reorganization of the Office of Education, the focal points for action in school aspects, and the work in progress in the development and strengthening of state and local school systems, vocational training, higher education, and research and statistics.

State Minimum-Salary Laws for Teachers, 1952–53

Paper, 39 pp., 25 cents. Research Division, National Education Association, Washington 6, D. C.

A report giving a summary of the provisions of existing minimum-salary laws and a state-by-state listing of the major provisions of the laws in 32 states and two territories.

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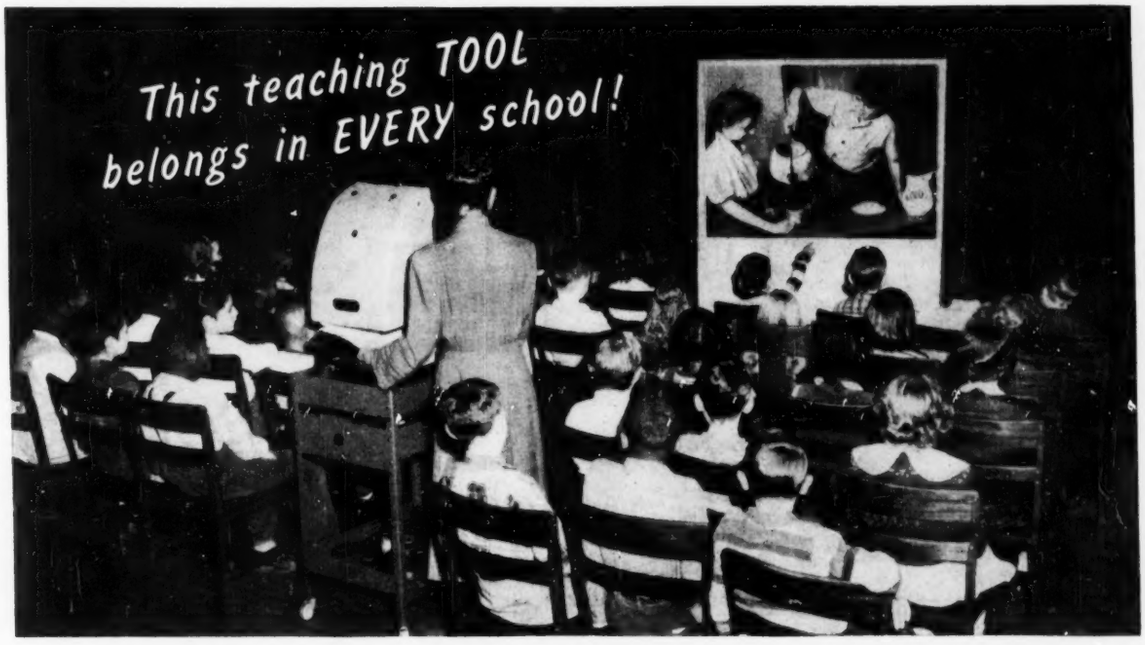

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PHILADELPHIA'S SCHOOL BUILDING PROGRAM

The Philadelphia board of education has announced a new $27,000,000 expansion program for Philadelphia public schools. This is in addition to a $46,000,000 building program carried out by school authorities since 1946. The proposed program, like the completed one, would be financed by long-term serial bonds.

The project will run over a period of several years. Largest items on the list are a replacement for South Philadelphia High School and a new senior high school in the northeast, both to cost $6,000,000. The new coed South Philadelphia High School is proposed to be built on 13th St. and the present structure is to be demolished.

Franklin High School is to be remodeled, at a cost of $1,000,000. A $3,250,000 junior high school is planned at 11th St. and Montgomery Ave. Contracts have been authorized for the Morris E. Leeds Junior High School, to cost approximately $3,250,000, and for two new elementary schools, one at 25th and Diamond Sts., and the other to serve a housing project near Midvale. Four other elementary schools are planned. Proposed additions and alterations to other schools will cost about $3,000,000.

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ELECTIONS AFFECTING SCHOOL BUILDINGS

The state of California has adopted a constitutional amendment authorizing the issuance of $185,000,000 in bonds for the continuance of a program of loans and grants to school districts for school construction.

The voters of Florida, at the November election, approved a comprehensive plan for state support of school building construction. The plan was presented to the voters in the form of a constitutional amendment, which earmarks for a period of 30 years, the present state allocation of $400 per instructional unit for capital outlay from the first receipts of motor vehicle license fees, allowing the 67 counties to issue 20-year revenue certificates against anticipated receipts.

Florida, with a rapidly growing enrollment and a large school population, faces a critical shortage of adequate school facilities. A survey of the needed school facilities showed that the state needs approximately 169 million dollars to bring school construction up to par and to eliminate overcrowded classrooms and double sessions. It is expected that 103 million dollars will be immediately available to those counties ready to undertake building programs in 1953.

SCHOOL BUILDING

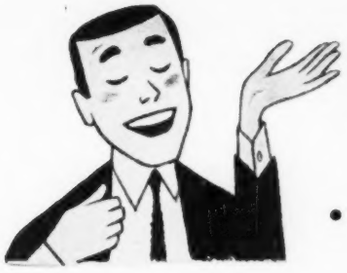
► Newark, N. J. The board of education has completed a survey of the school plant, conducted by Clarence Ackley and Associates, of Camp Hill, Pa. The survey is the first step in preparing plans for a school building and modernization program, estimated to cost $40,000,000. The program calls for four new schools and additions to schools. Contracts have been let for the building projects which are being financed with a bond issue of $4,000,000.

► The board of education of Newton, N. J., has employed Architect J. C. Van Nuys to prepare plans and specifications for a new high school building, estimated to cost $1,300,000. A bond issue of $1,500,000 was approved by the voters last year and the construction work will shortly be started.

► The board of education at Columbia, S. C., has launched a three-year survey of its school building needs and has engaged the services of Messrs. Engelhardt, Engelhardt & Leggett, as educational consultants. Columbia is a rapidly growing city, which has outgrown its boundaries, and the three-year study has become necessary to keep in step with the increase in school enrollment. Supt. G. L. Varn believes that the survey must be continued over a period of years.

► Pittsburgh, Pa. The board of education has ordered President William T. Todd, Jr., to appoint a committee to study and report on a long-range building program. The program calls for the erection of new schools and additions and for the improvement of the present buildings.

► Effingham, Ill. The Effingham community unit has voted $310,000 in bonds for the construction of two elementary centers. One a 6-classroom building, was completed and occupied in September, 1952. The other a 4-classroom building, will be completed in the spring of 1953. Both buildings, of the one-story type, were planned and erected by Lyle DeWitt, architect, of Decatur.



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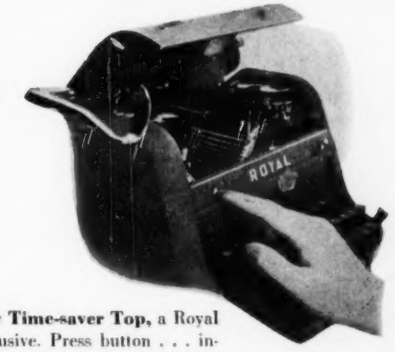

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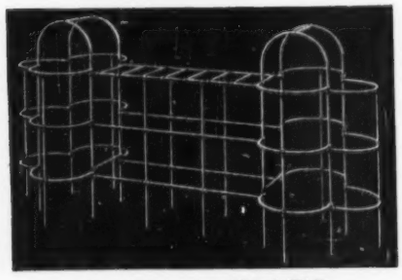

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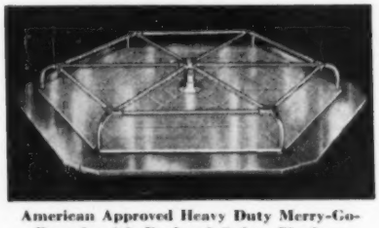

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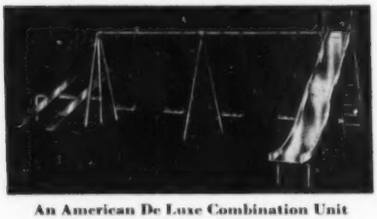

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KALAMAZOO BUILDS FOR COMMUNITY SERVICE

(Concluded from page 40)

Suitable for both student and community activities, this stage has storage space underneath for spectators' chairs and other equipment. An auditorium seating 1200, with legitimate stage equipment and full dressing room facilities is planned, but construction must await approval of a plan for financing.

An electrically operated folding partition divides the floor space in the gymnasium to permit simultaneous activities for boys and girls. The partition can be folded back quickly and easily to allow use of the entire floor.

At present, the auditorium wing contains six rooms for art and industrial-arts classes, plus a large music department with two spacious rooms and tiered seating for instrumental and choral rehearsals. The seating capacity of each is about one hundred persons. In addition there are nine smaller soundinsulated practice rooms, an ensemble room, a music library, and an instrument storage room.

Along the main traffic corridor servicing the various wings of the structure are visual aid rooms, conference rooms, a school store, a library, health and administrative offices, teachers' lounges, and a community room. The last, equipped with a kitchenette, is for the use of parents' study groups, PTA committees, and the teachers.

The public-address system, controlled from the main office, is designed for multipurpose operation. Announcements of radio programs may be directed to individual rooms or to selected groups of rooms. Programs originating in the gymnasium or dining hall may be "piped" to all other rooms in the building.

A separate boiler plant supplies hot water to radiant heating coils in the floor of the school structure. Temperatures in large zones are controlled by master thermostats. A system of ventilating ducts circulates filtered air.

The new South Junior High is the initial step in a comprehensive school building program before the Kalamazoo board of education. Some of our building program are made necessary through obsolescence and deterioration of old buildings, while new buildings and additions to existing buildings are made necessary because of the impending increase in enrollment.

Kalamazoo's crop of World War II babies has boosted the elementary school enrollment to 6400, a sharp increase over prewar years. Within the next three years the elementary enrollment is expected to increase 2500 more. Junior High grades, with more than 1800 children, will enroll approximately 600 more children within the next five years.

Subsequent to the construction of South Junior High, the people of Kalamazoo voted a second five-year pay-as-you-go program for the construction of a second new Junior High, a new elementary school, major additions to two elementary buildings, and for remodeling and improving other buildings.

By September, 1953, it is expected the new elementary school and the second new Junior High will be ready for occupancy. Our annual census count shows that by the time these structures are completed and occupied, the increase in enrollment will require an extension of the tax rate for building purposes for at least another five-year period.

PLANNING AND EQUIPPING AN ELEMENTARY CLASSROOM

(Concluded from page 65)

many opinions voiced by those who are supposed to know all about that subject. Scanning the literature, I find myself in a mess of opinions, contradictions, and such terms as reflectivity, color harmony, writing visibility, white versus yellow chalk, upkeep factor, contrast, brightness ratio, and the like. So I'll just give you my reactions of the past and opinions based upon them which favor —— no, I'll not mention any particular "board."

I do want to say that such boards should be light reflective to some extent, but not necessarily 50 per cent as some indicate. They should favor contrast between surface and writing thereon, they should be easily cleaned and maintained, not deteriorate to any extent, be easily obtained and installed. Now, reader, check up and fill in this blank —— with your answer.

There is one other feature of the classroom which deserves comment, the matter of storage spaces, too often neglected or everlooked. Ask any teacher about this — I know her answer. Our present educational philosophy and curricula call for the use of more than books and paper in the elementary classroom, much more. Where is one to store these materials? The need for such spaces is obvious and yet we find a definite lack of them. By all means, the administrator should make provisions, and the teacher should raise, well, whatever is called for on such occasions, and *demand* them, *if* she is given the opportunity to say something about the matter.

One must not forget an important part of equipment and that is the work area with a workbench, storage cabinets, a sink, water supply — all in the classroom and not in the corridor or some other space. The activity program requires such facilities and yet, checking 11 rather recent plans, I could find only one which indicates this space in the room and one in an adjacent hall space.

As may be surmised, one can write considerably more about this, to me, fascinating subject. I have failed to touch upon many phases of the elementary classroom but enough has been said to show the way, at least in a few important directions for the improvement of planning the elementary schoolroom.

One last word, "any reference to any commercial equipment is purely coincidental, and any bias or criticism is just the writer's way of expressing his thoughts."

PERSONAL NEWS

► A. CLYDE BALDWIN, secretary of the board of education of Linden, N. J., died at his home of a heart attack.

► The school boards of the Salisbury-Elk Lick joint school district, Salisbury, Pa., have elected STANLEY M. THOMAS to a third term as president. Other officers are JOHN D. PECK, vice-president; MRS. ELIZABETH B. LICHLITER, secretary; and HUBERT E. MILLER, treasurer.

► JOHN CUMMINGS, a member of the school board of Findlay township, Imperial, Pa., died at his home September 21. A resolution commenting on the passing of Mr. Cummings was adopted by the board, in which it expressed its regret at the loss of his friendship, advice, and keen business acumen.

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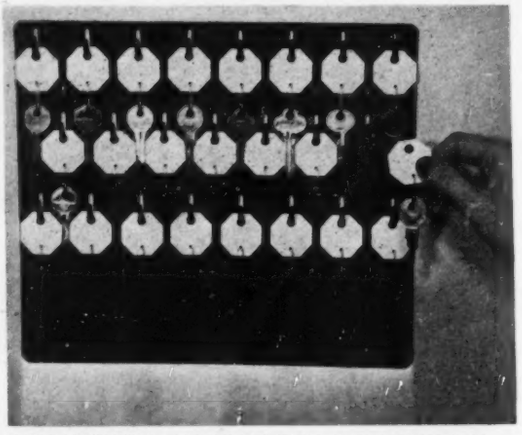

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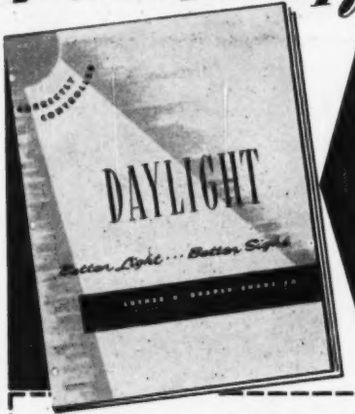

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THE SOUTH ST. PAUL JUNIOR HIGH SCHOOL

(Concluded from page 44)

substantial chairs. It is well adapted to public banquets with seating capacity up to 450.

Exterior Lighting. A special feature thought to be one of the first to be provided for any public school building is an exterior lighting system consisting of 36 wall lights located approximately 28 feet apart and at the approximate top floor level.

The Visual Education Room. Though visual education is not limited by any means to one room, there is a special projection room with sloped floor and fixed auditorium seating. There are 93 seats. The room has a small stage with attractive curtain and adjoining dressing room and storeroom; so it may be used for various types of activity.

The library located on second floor, over the main entrance, is worthy of special notice not only because of its utility and its furnishings but also because of its beauty. It has a ceiling height bank of aluminum windows on the east and north which affords a lovely view of the surrounding residence areas and of the Mississippi Valley below.

Individual locker closets are a special feature of the large and well-equipped woodwork shop.

The gymnasium is the combination type of gymnasium-auditorium. For use as a gymnasium it may be divided by means of a soundproof folding partition into two areas, one for the boys and one for the girls.

* * *

The Junior High School building in South St. Paul, Minn., is brand new. It was built to fit a carefully predetermined educational program, to accommodate a growing group of junior high pupils, and to meet as well certain nonschool community needs. Its present capacity is 900, but it can readily be expanded in two directions when and as growing enrollments make expansion necessary. Its cost including furniture, equipment, and architect's fees but excluding the site was approximately $1,200,000. The building is of substantial construction and beautiful design. Aside from the conventional accommodations for meeting educational needs and requirements, it has a number of special features which might well be of interest to anyone planning a functional community school.

MARION SELLS SCHOOL BUILDING PROGRAM TO COMMUNITY

(Concluded from page 63)

able to win support by appealing to reason rather than emotions? (2) If the majority of the voters respond to an emotional appeal rather than intellectual one, may not unprincipled people also use such appeals for cleverly concealed evil purposes?

BOARD ACCEPTANCE OF SCHOOL BUILDINGS

(Concluded from page 64)

decision which must be taken in demonstrable good faith. Thus, for instance, there would appear to be no objection to a board making a final type acceptance subject to "necessary clean-up work" being completed, providing such action was clearly taken in good faith.

EDITORIAL NOTE: Should readers desire access to the above opinion in its entirety, it is probable that the larger law offices, law schools, or the local Bar Association libraries in their localities will have all or parts of the National Reporter System wherein the complete opinion will be found.

CINCINNATI PROVIDES NEW FACILITIES

Supt. Claude V. Courter, of Cincinnati, Ohio, has pointed out to the board in his latest budget, that foreseeable operating costs in 1954 will be $500,000 greater than in 1953, and in 1955 will be $500,000 greater than in 1954. This forecasts a school membership increase for the next several years, together with a series of needs for new buildings. These include five elementary schools, four junior high schools, and one senior high school, as well as additions to existing buildings.

In September, two new elementary schools were occupied. Incomplete at present is a new Central High School, a multi-million-dollar plant, to house the vocational schools under one roof. A new primary school, K–3, will relieve crowded conditions in an elementary school district.

Another new structure is the Howard C. Trechter Memorial Stadium, a $500,000 structure, completed and dedicated in September. The stadium, located on a 46-acre tract, has a capacity of 15,000. It will be used for both public and parochial high schools of the city.

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4.	Vitoprest	STANDARD GRADE	Hardboard, tempered for strength — LightGreen or Black
5.	Vitoplate	STANDARD GRADE	Wood fibre chalkboard construction — LightGreen or Black
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In the Case of Shades . . .

Let There Be Light—but—!

William H. King

Vinylite plastic material used in Passaic Valley Regional high school in Little Falls, N. J.

BOARD of education members and administrators alike are beginning to realize that audio-visual methods and materials will provide the children under their care with a better education. Now that the "GI Way" has been accepted as being educationally sound, more schools are purchasing equipment and are expecting their teachers to use them effectively.

The increased use of audio-visual methods has presented the local school administrator with quite a few real headaches. Not the least of these is the problem of room darkening.

Not too many years ago, it was considered desirable to have the projection room in total darkness. Today, authorities agree that the extreme contrast caused by the bright image on the screen and the totally dark room causes eyestrain. This produces a halo effect and prevents harmful contrast. The method usually used to prevent this contrast is to allow light to enter the classroom above the shades or drapes. The light is then diffused by the ceiling.

The new Boy Scout Training Center at Mendham, N. J., has tried to solve this problem by having a recessed light in the wall behind the screen.

Not Opaque Enough

Ordinary classroom shades are not opaque enough to darken the classroom sufficiently for good projection. Color films appear "washed out" if the room is too light. Except on a very cloudy day, it is almost impossible to project opaque materials in a classroom equipped only with regular shades.

In a school system with only a little money to spend, there are two or three things that can be done to materially help the situation. The shopman in one school mixed lampblack and other ingredients and "painted" the backs of an old set of shades. This material sealed the pores of the shades and prevented light from passing through. Building a plywood frame around each shade, so that the shade fits between slots prevents the light from leaking into the room along the sides of the shades. This is especially important during warmer weather when it is necessary to have the windows open behind the shades. The proper positioning of the screen or the use of a shadow box will be helpful in difficult situations.

Unquestionably, the best solution is to find some method of supplementing the regular classroom shades. Many manufacturers claim that their material, and their method, is the best. The remaining part of this article is devoted to information received from manufacturers who were contacted and asked to supply their solution to this very real problem. All kinds of materials and all price ranges are included. The more you have to spend, the wider will be the choice of colors and fabrics.

Dark Shades

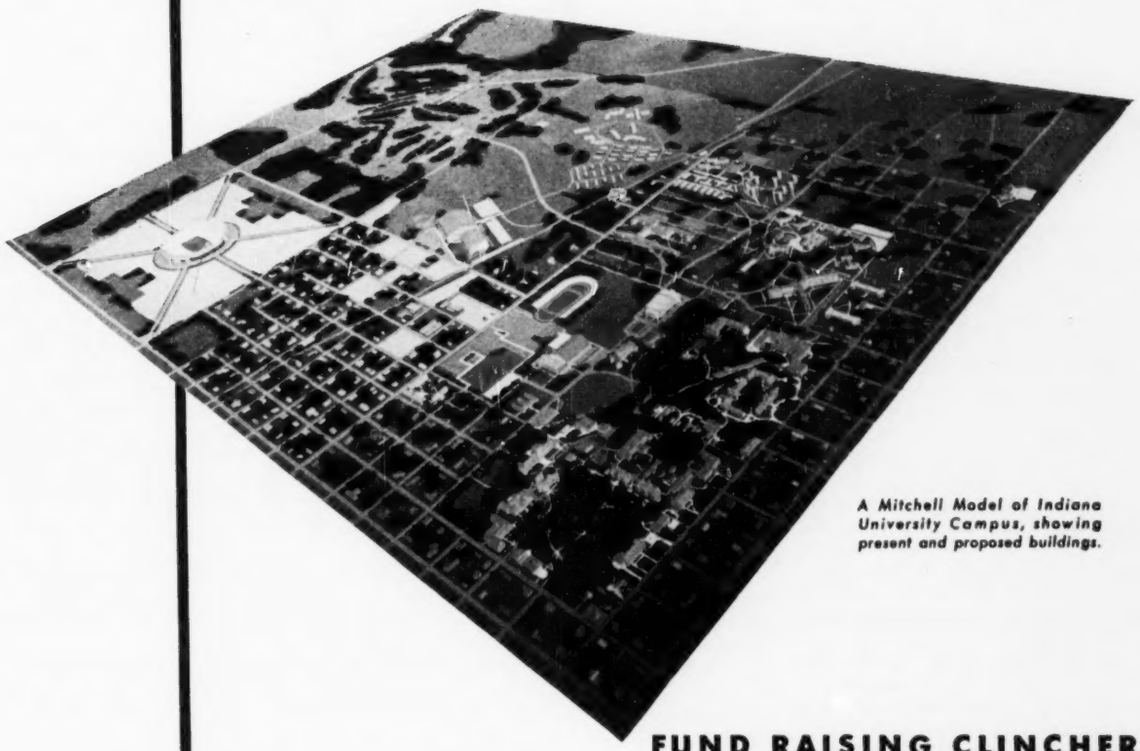
The Luther O. Draper Shade Company of Spiceland, Ind., working on the assumption that it is too expensive to darken all classrooms, have developed dark shades which are carried from place to place and are easily and quickly installed. Their material called "Pakfold" or "Dratex" contains no filling agent and can easily be folded without cracking. Special projection hinges are permanently installed in each classroom and the shades are quickly slid into place by means of a special tool which permits installation without climbing. Shades are mounted so that they overlap. Widths up to 150 in. are available. Prices vary according to size.

The Carl Lindemann Company, 46–54 Tuers Avenue, Jersey City, N. J., recommends a Canvasheade Black shade. This shade is made of enameling duck, double filled, averaging 84 threads in the warp and 28 threads in the filling, weighing 8–9 oz. per yard. The material is chemically impregnated and coated with vinyl plastic resins. They recommend installing them at the head of the window, on the face of the casing. For windows exceeding 70 in. in width, a multiple overlapping type of installation is recommended.

To some administrators, dark shades are objectionable. The Interstate Shade Cloth Company, Hoboken, N. J., distribute two

(Continued on page 94)

William H. King is state co-ordinator of audio-visual education in the New Jersey state department of education.



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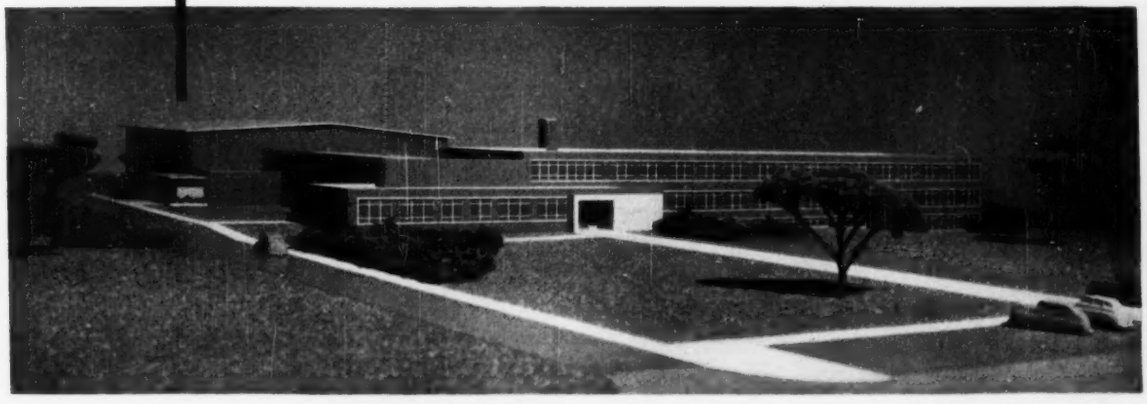


A Mitchell Model of Charleston, Illinois High School — Architects: Berger & Kelley, Champaign, Illinois

(Continued from page 92)

types of shade materials called "Exlite" and "Shadowproof." Both are available in white, eggshell, ecru, and light tan and the "Shadowproof" is available in black for those who prefer it. The "Exlite" material is available in widths up to 54 in. and the "Shadowproof" in widths up to 150 in. Both materials are mounted on regular rollers and, with the exception of the light leaks at the sides of the shades, will solve the darkening problem.

In Steel Housing

Another company that advocates shades to solve this problem is the Rolscreen Company, Pella, Iowa. Their product, which is called "Pella Lite-Proof Shades," is installed so that, when not in use, the shade roller is contained and totally concealed in a steel housing at the top of the window frame. To darken the window, you simply pull down the shade which automatically enters metal guides at each side of the window. These guides seal out light and keep the shade in place. A positive latch snaps and holds the shade tightly, eliminating bulges and open areas around the frame. A recent change has been made in construction and stiffening bars are now attached to the cloth to prevent air from pushing the shades from the guides.

The Bontex Shade, made by the Columbus Coated Fabrics Corporation of Columbus, Ohio, is recommended by the manufacturer for audio-visual work. Their shade comes in two colors, white, No. 241, and tan, No. 240. These shades sell for approximately 25 per cent more than regular classroom shades.

Double Shade

Darkening shades in which a double shade operates on one roller are manufactured by the Oliver C. Steele Manufacturing Co., Spiceland, Ind.

Many schools are turning to drapes in preference to shades for darkening. Again there is quite a price range depending on the type of material desired.

The Hubert Mitchell Industries of Hartselle, Ala., suggest drapes made of either velour or twill, lined to make the fabric more opaque.

The Art Zeiller Company, Inc., of 26 Hudson Street, Ridgewood, N. J., use a Bakelite (vinylite plastic) material. The material is available in navy blue metallic, maroon and green but colors other than the blue have to be backed with another color to make them sufficiently opaque. This increases the price about 50 per cent. An aluminum track is used and this track is fastened by either ceiling or wall brackets. This permits windows to be treated as a block.

The C. R. Skinner Company of 239 Grant Avenue, San Francisco 8, Calif., calls their product "Slide E-Z Light Control Curtains." A choice of colors is provided in either a repp cloth or herringbone twill. A track is furnished which is screwed to the ceiling. Material is sent, seamed, hemmed and with slides sewed on. It is all ready for installation.

Fiberglas Cloth

S. L. Mitchell, president of the Knoxville Scenic Studios, Inc., Maryville Pike at Willoughby Road, Knoxville, Tenn., wrote and recommended a material made by the Duracote Corporation of Ravenna, Ohio. Mr. Mitchell said that this is a Fiberglas cloth coated on both sides with a plastic. It's fireproof and completely opaque. Dura-Decor, the trade name of this fabric, comes in a variety of colors and comes in different weights. It is sold only in standard rolls or piece lengths of 50 lineal yards. Mr. Mitchell states that his company has used Bolta-Flex or similar light weight artificial leatherettes, or leathers. Sailcloth and Ferma Cloth manufactured by Covington Fabrics Corporation have also been used successfully.

Many of the classrooms in the city of Detroit have been darkened by the Mork-Green Studios, 405 Wood Building, Syracuse, N. Y. The material that they suggest is a 12 gauge plastic. Samples sent reveal a choice of three colors. Their company uses a steel track and provides their drapes with a flexible chainweight at the bottoms. This seems highly desirable because it permits the windows to be opened behind the drapes.

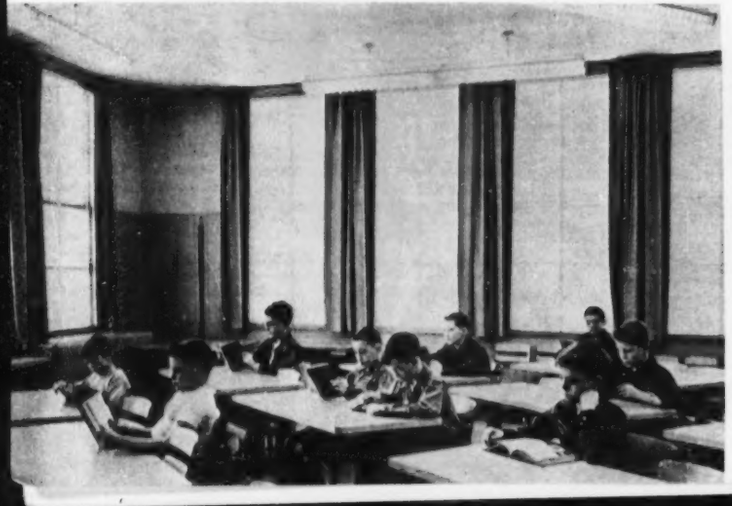
L. Kaltman and Sons, Inc., 287 Washington Street, Newark 2, N. J., supply a material which they call "Kaltex." This is a Virgin Vinyl plastic which is completely opaque, flame resistant, mildew and fungus proof and can be cleaned with a dampened cloth. A steel traverse rod is provided with the order. This rod was originally of aluminum but the present world condition required a change. "Kaltex" comes in two colors, black or green, and comes stitched and equipped with grommets every 12 in.

In Summary

1. Classrooms must be darkened adequately if maximum results are to be obtained.
2. Either shades or drapes may be used satisfactorily.
3. The cost of having a room darkened depends on the quality of the material selected. Adequate darkening, including installation, can be obtained for less than $100 per classroom.
4. Where costs must be kept to a minimum, rooms can be darkened at little cost except for materials. See article by D. F. Schutte, "To Darken a Schoolroom" in the September, 1946, issue of SCHOOL BOARD JOURNAL.
5. When ordering drapes, keep in mind that they should extend well below the window sills. They should be mounted from 6 to 18 in. from the windows to allow for circulation of air.
6. Classroom darkening is not a luxury but a necessity. You may have the best projection equipment available, but if this equipment is not being used under proper conditions, much of the effectiveness of this equipment is being lost.

It is impossible to close this article without a few words on new school buildings. Administrators should give the audio-visual director an opportunity to look over your plans before building actually begins. Little things, such as adequate electrical outlets in the right places, will make for a more efficient classroom. And — while the building trend seems to be for more light in the modern classrooms, "Let There Be Light — but —" let's have adequate means of controlling this light included as part of the original building plans. The slight additional cost will pay big dividends.

Decorative material for room darkening is used in the Jefferson Elementary School, Findlay, Ohio. The cloth is Fiberglas, coated on both sides with a plastic.



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(Concluded from page 10)

6. The National Council for Accreditation of Teacher Education sees the possibility that it may, with profit to all concerned, act jointly with regional accrediting associations while accrediting programs of teacher education. We favor experimentation with such joint action under conditions in which the standards of the National Council (or those of the AACTE until July 1, 1954) are applied to programs of teacher education by persons selected by the National Council (or by the AACTE until July 1, 1954), resulting in the listing of accredited teacher education programs by the National Council (or by the AACTE until July 1, 1954).

7. The National Council for Accreditation of Teacher Education is aware that abuses may result from activities of professional accrediting agencies that are national in scope. It proposes to co-operate fully with colleges and universities and with other agencies to avoid such abuses in the National Council's activities. At the same time, we are keenly conscious of the wholesome benefits accruing from wisely operated professional accrediting agencies that are voluntary in nature, that include in their membership all segments of interest concerned with professional education, and that are devoted to the public good. The National Council regards teaching as a major profession of great public importance and believes it deserves an accreditation agency that will always be responsive to constructive suggestions from any source.

Before adjourning its first meeting, the Council arranged for some immediate next steps, including the setting up of headquarters for the current year at 467 West Hancock Street, Detroit 1, Mich., as most convenient for Chairman Lessenger; provision for additional committees, for publicity, for finance; and for other items designed quickly to develop the council into a strong and effective organization.

NEW HARTFORD SCHOOL

(Concluded from page 54)

Broken down roughly, the picture is

Cost of site	$80,000
Cost of new construction including bus garage	$1,400,000
Cost of new equipment and incidentals and remodeling of former high school	$235,000

The site contains 27 acres; there are 1,520,000 cubic ft. of new construction; 104,000 cubic ft. in the new 10-stall bus garage. The architect's latest figures show that the construction cost will be about 75 cents per cubic foot. The construction proceeded smoothly with no major delays because of shortage of materials and few labor difficulties. The tax rate for the district before the new building was started was $17.64 per thousand dollars of assessed valuation. The tax rate for 1952–53 will be about $20 per thousand.

To a neophyte, like myself, who has never before experienced the problems and decisions of a building program, several points definitely stand out. The architect must be an understanding, tactful, and firm individual, who will listen to the ideas of committees and professional school people. We were most fortunate in the choice of our architect, J. Kenneth Baird, a resident who was available for advice and consultation anytime. The clerk-of-the-works is another very important man who must know not only the problems of construction, but also how to get along with other men. Our clerk-of-the-works, Reginald Campfield, has been invaluable in co-ordinating and expediting the work of plumbers, electricians, carpenters, masons, and the like. The members of a board of education, who truly exemplify that motto — "Service Above Self" — perform a service to a school district that cannot be measured in dollars and cents. Not only must they be willing to spend many long hours at special meetings, but they must also furnish the wise leadership needed in such an important project. The New Hartford board was ideal in every respect. The entire school staff — faculty, bus drivers, custodians — can do much to bring about the successful outcome of a building program by their willingness to spend extra time on committees, adjust themselves to new conditions. Last but not least, the community itself plays an important part. May every principal be as lucky as I am, in having such a group of people who are thoroughly sold on the need for and value of the best education possible for their sons and daughters and are willing to make any sacrifice to secure this education.

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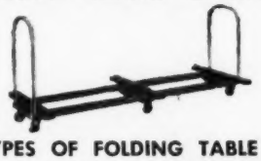
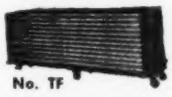


TWO TYPES OF FOLDING TABLE TRUCKS



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News of Products for the Schools

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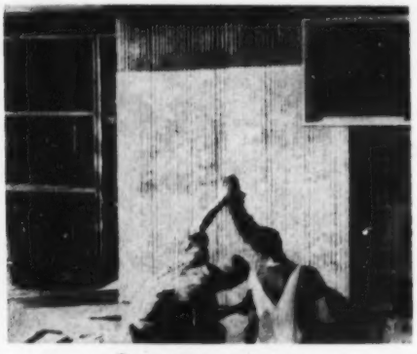

COLORBESTOS SIDING

colors have an almost indestructible color fastness because of the high fired ceramic granules that are used. The random-ribbed pattern parallels the 96-in. dimension of the board. From a distance these ribs of varying width and color intensity give the appearance of deep texture. Yet, the board is actually smooth to the touch.

For more information write to *Johns-Manville, 22 East 40th Street, Section S.B.J., New York 16, N. Y.*

(For Convenience Circle Index Code 010)

Lift-Lid Tubular Table With Book Box Available

A lift-lid tubular table with enclosed book box has been added to the Airliner tubular school furniture line manufactured by the Griggs Equipment Company, Belton, Tex. The new Griggs design provides a lift-lid table with easy operating, the hinge and top support afford easy opening of the top and prevents the top from slamming down while being closed. The one-piece top is 18 by 24 in. hinged along the back of the book box. The tables are available with genuine Formica faces on the top.

For further information, write to the *Griggs Equipment Co., Section S.B.J., Belton, Tex.*

(For Convenience Circle Index Code 011)

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A self-contained water cooling unit has been designed for complete in-the-wall mounting. A combination of the Filtrine Wal-Pak with any Crane wall drinking fountain is pointed to save valuable floor space and enhance the beauty of modern, interior design. Featuring chilled water without exposed machine or piping, the new unit also eliminates uncleanable recesses since it has only a flush-with-wall louvered panel as visible evidence of the chilled water source. Ease of installation and maintenance are basic features of this new type of cooling unit. A separate, removable louvered panel gives full access to the cooling unit and compressor which are factory packaged on a sturdy, welded angle chassis with all electrical and plumbing connections conveniently located for fast installation within the wall aperture.

For information write to *Crane Co., Section S.B.J., 836 S. Michigan Avenue, Chicago 5, Ill.*

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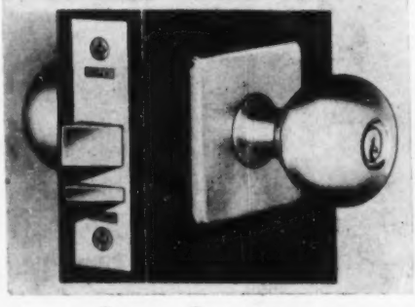
(For Convenience Circle Index Code 013)



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For further information and description write to: *Beckley-Cardy Company, Section S.B.J., 1632 Indiana Ave., Chicago 16, Ill.*

(For Convenience Circle Index Code 014)

Covering for Glass Admits Sunlight Without Glare

Windows admit sunlight without glare when the glass is covered with a new type shade made of Vinylite plastic sheeting. Easily applied and removed and reusable the shades are tough and strongly resistant to tearing, abrasion, scuffing, creasing, and cracking. Vinylite plastic sheeting also resists moisture, mold and mildew, oils, greases, alcohols, and many chemicals. Cut to windowpane size, Vinylite plastic sheeting is applied by wetting the glass, pressing the polished side of the shade against it, and squeegeeing out the water. Properly applied, the shade will stay in place as long as desired, yet it is easily stripped off by merely prying up the corner with a fingernail. Washable on or off the window, the shade needs only to be rinsed in warm water to restore adhesiveness before reuse. Custom cut to required size, the new shades

(Continued on page 99)

News of Products . . .

(Continued from page 98)

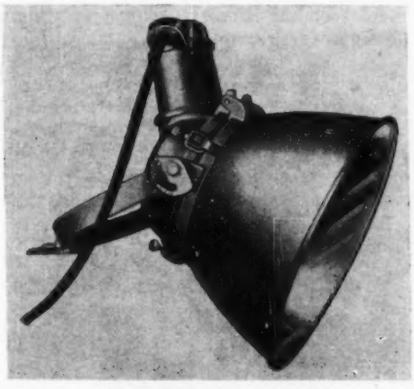
are available in eight colors, from frosted translucent to blackout black, to admit varying degrees of glareless light.

For information write to *Bakelite Company, Section S.B.J., New York 16, N. Y.*

(For Convenience Circle Index Code 015)

Floodlight Designed to Simplify Installation

A floodlight designed especially for lighting athletic fields and playgrounds has many handy features which simplify installation, aiming, and maintenance. The floodlight is of aluminum construction throughout: lamp socket enclosure and cable entrance of cast aluminum, and reflector of Alzak finished sheet aluminum, either polished or etched to obtain a wide selection of beam spreads to meet any sports lighting requirement. A tempered plate glass lens is securely attached to the reflector. This lens will not break even when struck by a hard-hit baseball, insuring perfect safety for spectators beneath. Type FLA floodlight will accommodate lamps of from 750 to 1500 watts.



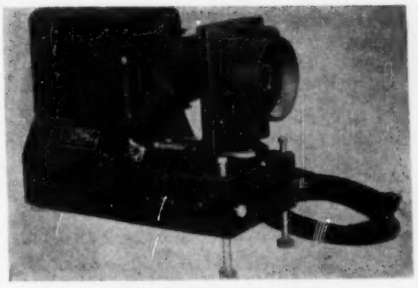
TYPE FLA FLOODLIGHT

For further information write to *Crouse-Hinds Company, Section S.B.J., Wolf & 7th Street, N., Syracuse, N. Y.*

(For Convenience Circle Index Code 016)

New Model "70" Versatile Projector

To popularize the use of 70mm. film Charles Beseler Co., Newark, N. J., is now offering a new Model "70" projector, by means of which the 70mm. copies can be enlarged to their original dimensions or larger, and easily viewed by moderate-size audiences. Illumination by a 300-watt, 115-volt, T-10 projection lamp and condensing system provides excellent screen images. Forced air draft keeps lamp, condensers, heat absorber, and slide completely cool, and black film can be safely exposed indefinitely. Two slide carriers are provided. Separate frames are fed into the projector in a pair of individual framing kits, either horizontally or vertically. For frames kept on continuous strips, a feed-through mechanism permits the rolled film to be carried either forward or backward.



BESELER MODEL "70"

For information write to *Charles Beseler Co., Section S.B.J., Newark, N. J.*

(For Convenience Circle Index Code 017)

Sensitive Sprinkler Lessens Fire Danger

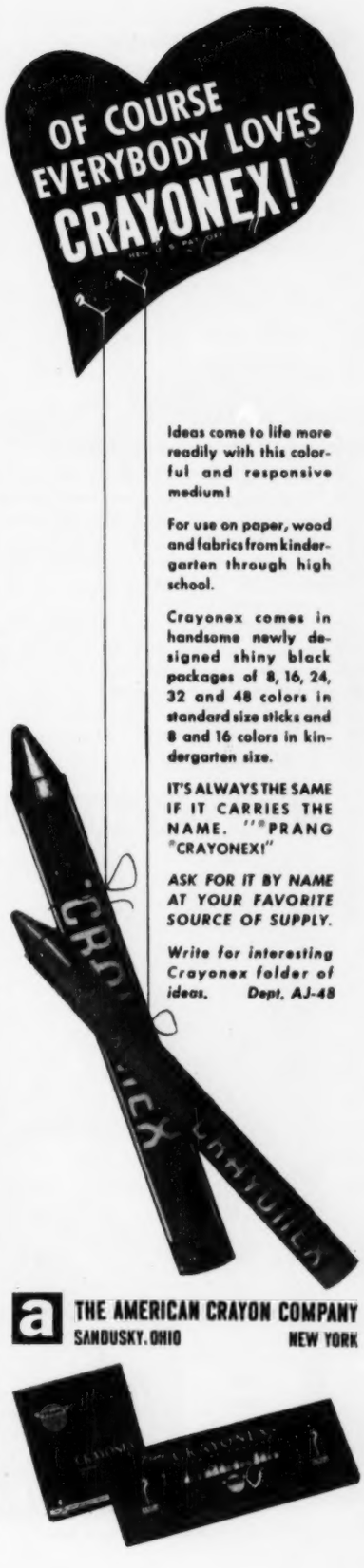
A new automatic sprinkler, utilizing a solid organic chemical as its fusible element, will afford greater protection from fire, the manufacturer reports. This new, extremely sensitive Globe Automatic Sprinkler opens much closer to its rated temperature with a greater degree of precision than has been attained thus far.

The unit not only pioneers a new practice in the design and construction of automatic sprinklers, but is the first and only approved sprinkler utilizing a solid chemical for its fusible element. Because this chemical is solid, different compounds can be produced, each with a definite unchanging fusing temperature.

In service, when surrounding atmosphere attains the temperature for which one of

(Continued on page 100)

NEW AUTOMATIC SPRINKLER


OF COURSE EVERYBODY LOVES CRAYONEX!
Ideas come to life more readily with this colorful and responsive medium!
For use on paper, wood and fabrics from kindergarten through high school.
Crayonex comes in handsome newly designed shiny black packages of 8, 16, 24, 32 and 48 colors in standard size sticks and 8 and 16 colors in kindergarten size.
IT'S ALWAYS THE SAME IF IT CARRIES THE NAME. "PRANG "CRAYONEX!"
ASK FOR IT BY NAME AT YOUR FAVORITE SOURCE OF SUPPLY.
Write for interesting Crayonex folder of ideas. Dept. AJ-48
THE AMERICAN CRAYON COMPANY
SANDUSKY, OHIO
NEW YORK

News of Products . . .

(Continued from page 99)

these sprinklers is rated, its fusible element of solid chemical changes to a liquid, thus opening t..e closure and permitting water to discharge. The new sprinkler, of the central strut type, is less susceptible to injury than customary types, and has greater strength than sprinklers of larger, bulkier design.

For further information write to: *Globe Automatic Sprinkler Co., Inc., Section S.B.J., 250 Park Ave., New York 17, N. Y.*

(For Convenience Circle Index Code 018)

Norcor Announces Folding Tablet-Arm Chair

A folding tablet-arm chair is now available for emergency classroom use through the manufacturer, Norcor Manufacturing Co., Green Bay, Wis. It is a Y-type chair of strong tubular steel construction, with a comfortable, form-fitting plywood seat and curved steel back rest.

The Tablet-Arm is made from 5/8-in. resin-bonded plywood and is attached in such a way that it automatically folds against the chair as the seat is raised, requiring only one easy motion. When folded the chair is very compact and easily stacked for storage.

NORCOR 362

The Norcor 362 has a minimum of joints, links, or hinges to create trouble, and presents an exceptionally clean, functional appearance. The radially welded tubular steel stretchers give it exceptional strength so that it will not rack or twist even under severe strains.

This new chair is available in taupe finish with wood parts in either natural or walnut. For further information write to: *Norcor Manufacturing Co., Section S.B.J., Green Bay, Wis.*

(For Convenience Circle Index Code 019)

Fine Furniture Choice of America's Leading Schools

- For more than fifty years, school boards throughout the country have chosen Peterson quality furniture.

The Peterson staff of engineers continual research and experimental work in collaboration with leading educators assures you of equipment designed in keeping with modern teaching requirements. Your request for free consultation and literature is urged. No obligation of course.

LEONARD **PETERSON** & CO., INC.

1224 Fullerton Ave. Chicago 14, Illinois

American-Standard Offers Kitchen Cabinets

Through the American-Standard kitchen cabinet line, base, wall, and undersink cabinets are available with the exclusive patented convertibility feature which provides the proper type of storage space as it is needed.

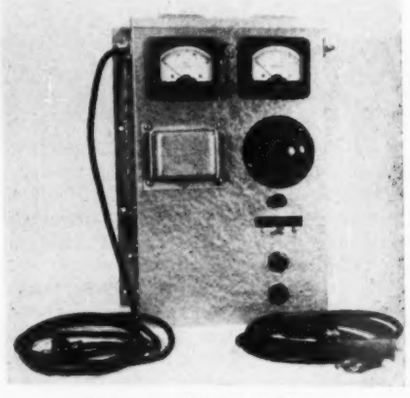
Doors, sliding shelves and both concealed and exposed drawers can be added or switched around in a few minutes' time. These cabinets come in a wide variety of sizes and are constructed inside and out of sheets coated with baked-on enamel for lasting wear. Door fronts are full sized with streamlined chrome-plated handles.

For further information write to: *American Radiator & Standard Sanitary Corp., Section S.B.J., Pittsburgh 30, Pa.*

(For Convenience Circle Index Code 020)

Economical Unit For Science Labs

An economical unit which delivers high power in the variable voltage range, from 0–24 *v* a.c. or d.c., as desired, is suitable for all physics, chemistry, general science, advanced science, simple electronics experiments requiring electric current in the stated range. It does away with the requirements of dry cells, portable storage battery, small portable rectifiers and transformers, by furnishing adequate power in the range. New complete catalogs and other data on request from *Electrosig Corporation, Section S.B.J., Buffalo 21, N. Y.*



VARIABLE VOLTAGE UNIT

(For Convenience Circle Index Code 021)

IBM Electric Time System Features

The IBM Electric Time System with Electronic Self-Regulation co-ordinates activities in any school or institution. One master control unit regulates automatically all corridor and classroom clocks and synchronizes all bells, gongs, and buzzers — in classrooms and on playgrounds —

(Continued on page 102)

NO OTHER ORGAN OFFERS YOUR SCHOOL SO MUCH!

Prices start at $1264

Shown here MODEL 2C2 TWO MANUAL FULL A.G.O. 32-NOTE PEDAL BOARD

CHOOSE *Connsonata*

AMERICA'S FINEST ELECTRONIC ORGAN

You'll find through actual comparison and demonstration that no other organ, electric or electronic, offers so much for the money . . . no other organ is so suitable for school or auditorium.

CONNSONATA is a development of the Sound and Electronic Research Laboratories of C. G. CONN Ltd., world's largest manufacturer of band and orchestra instruments, specialists in musical tone for over 75 years. CONNSONATA, Division of C. G. CONN LTD., ELKHART, INDIANA, Dept. 131.

WRITE FOR *Free* LITERATURE

MAYLINE

Mayline has FINE Classroom Furniture

Single or Double Top styles — well constructed — Solid Maple Top — Rapid acting vise. Sturdy Oak base.

Folding Table

- HARDBOARD TOP
- TUBULAR LEGS
- HARDWOOD FRAME
- LOCKING BRACE
- DEPENDABLE

Sturdy, durable table for cafeterias, conference rooms, displays, and other special purposes. Reasonably priced.

— Sales made directly to schools —

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CAPS & GOWNS

FOR COLLEGES
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premier engraving co.

818 W. Winnebago Street • Milwaukee 5, Wisconsin

News of Products . . .

(Continued from page 100)

providing accurate scheduling of classes, assemblies, and recreational activities.

With this system, clocks are connected directly to regular a.c. current and are self-regulated without special clock wiring. This provides for flexibility and dependability coupled with economy of installation.

A Master Time Control, which operates from the same alternating current to which clocks are connected, is the "director" of the system and keeps all units in agreement with it. Periodically the control, through electronic tubes in a transmitter, sends a supervisory pulse out over the regular a.c. lighting lines. A simple electronic receiver in each clock accepts the pulse. If any clock in the system is slower or faster than the Master Time Control it corrects itself automatically.

Signaling devices, such as bells, gongs, or buzzers, are connected to the system without special wiring, and signals are sounded automatically according to a predetermined schedule set up in the program signal control of the master.

For further information write: *International Business Machines Corp., Section S.B.J., 590 Madison Ave., New York 22, N. Y.*

(For Convenience Circle Index Code 022)

PLANNED FOR YOUR PROTECTION

CONTINENTAL Chain Link Fence provides better protection features—more value for your fence dollar. You get engineered erection; 12 fence styles; rigid framework secured by tough rods and wire; galvanized fabric, and welded gates. Get these plus features in Continental's "Planned-for-Protection" fence.

*Trade Mrks Reg. U.S. Pat. Off.

CONTINENTAL STEEL CORPORATION
Kokomo, Indiana

Please send FREE copy of "Planned Protection"—complete manual on property protection.

Name_____

Address_____

City_____ State_____

CONTINENTAL STEEL CORPORATION

Classroom Converted For Electric Typing

The increased use of electric typewriters as teaching instruments has resulted in new requirements for classroom planning. One Eastern secretarial school, converting an entire classroom for electric typing, has mounted sockets on the underside of its typing tables to accommodate the typewriters at each station. They are then connected to a wall conduit by BX flexible cables encased in metal conduits. A circuit on-off switch is mounted on the wall by the demonstration stand for the teacher's use so she may shut off the current at the end of the class period.

Greater Vacuum In Eraser Cleaner

The improved design of the new Little Giant eraser cleaner features an offset fan housing to create a greater vacuum. Because of this more powerful suction erasers are cleaned more thoroughly, classrooms

LITTLE GIANT ERASER CLEANER

are kept free of chalk dust. A new metal base with rubber feet holds the machine firmly in place on desk top or table while in use. The machine is lightweight; it can be carried and operated easily by an eight-year-old child. Every machine is guaranteed and replacement parts and services are available at all times from the company.

For further information write to: *Beckley Cardy Company, Section S.B.J., 1632 Indiana Ave., Chicago 16, Ill.*

(For Convenience Circle Index Code 023)

Wayne Gymstand Catalogs

Catalog G-52, recently issued by Wayne Iron Works, pictures and describes the type "G" grandstand — a steel, portable grandstand which is easily dismantled and erected. If required, the type "G" may be used as a permanent grandstand. Catalog G-52 includes: descriptive material, design and construction details, specifications and installation photographs.

Catalog R-52 describes and illustrates the Standard and Movable Rolling Gymstands manufactured by Wayne. The catalog includes: tables of dimensions, detail drawings, sight line charts, planning aids for gymnasium seating, installation photographs and specifications.

Write: *Wayne Iron Works, Section S.B.J., Wayne, Pa.*

(For Convenience Circle Index Code 024)

Descriptive Material . . .

► **A detailed folder giving full information on** Weber Costello Company's chalkboard series is available. Information on each of the six types of chalkboard includes its quality rating, type and color, structure and size, and advantages. Obtained from *Weber Costello Company, Section S.B.J., Chicago Heights, Ill.*

(For Convenience Circle Index Code 025)

► **A Terrazzo and Mosaic Catalog and Design Book** is available upon request from the *National Terrazzo and Mosaic Association, Section S.B.J., 711 Fourteenth St., N.W., Washington 5, D. C.*

(For Convenience Circle Index Code 026)

► **Brochures on architectural steel products, metal,** swing and slide doors, and steel and aluminum building panels are available from *Detroit Steel Products Company, Section S.B.J., 2250 E. Grand Blvd., Detroit 11, Mich.*

(For Convenience Circle Index Code 027)

► **Many schools are discovering that printing expenditures** can be reduced by reproducing yearbooks, reports, forms, and other types of printed material by photo offset from typed copy. A new booklet, "Typographic Planning for Typewriter Composition," is obtainable from *International Business Machines Corporation, Section S.B.J., 590 Madison Avenue, New York 22, N. Y.*

(For Convenience Circle Index Code 028)

► **The Russell & Erwin Division of the American** Hardware Corporation has issued a 48-page booklet, B-1, entitled "Care, Adjustment and Maintenance of Your Russwin Builders' Hardware." It may be obtained by writing to: *Russell & Erwin Div., The American Hardware Corp., Section S.B.J., New Britain, Conn.*

(For Convenience Circle Index Code 029)

► **Separate, fully detailed booklets are being offered** by the Trane Company on their following products: Bulletin DS-327 B, Unit Heaters; S-340 S, Matched Shelving for Unit Ventilators; DS-340, Unit Ventilators; DS-392, Wall-Fin Heaters; DS-348 B, Fans. Write: *The Trane Company, Section S.B.J., La Crosse, Wis.*

(For Convenience Circle Index Code 030)

(Continued on page 103)

Before you buy

PLAYGROUND EQUIPMENT

Write for our 48-page Catalogue, featuring complete line of the finest devices you can buy for parks, playgrounds, swimming pools (including basketball backboards for gymnasia).

•

Also ask for FREE Diving Score Cards
Write Dept. SBJ

RECREATION EQUIPMENT CORP.

THE RECREATION LINE

P.O. BOX 967 ANDERSON, IND.

Descriptive Material . . .

(Continued from page 102)

► **A folder describing the L.O.C. "low over-all** cost" factors involved in lighting is available from the *Miller Company, Section S.B.J., Meriden, Conn.*

(For Convenience Circle Index Code 031)

► **The fireproof chemical paint and varnish remover** called "Kurl-off" is described in detail in a new folder available from the *Hillyard Chemical Co., Section S.B.J., St. Joseph Mo.* Detailed information tells of the one thousand and one uses of this noninflammable varnish and paint remover.

(For Convenience Circle Index Code 032)

► **An unusually comprehensive catalog of 300** pages, fully illustrated, covering wood laboratory equipment has been prepared by the *Kewaunee Mfg. Co., Section S.B.J., Adrian, Mich.*

(For Convenience Circle Index Code 033)

► **All economics teachers, architects, and superintendents** of schools will be interested in a new brochure which offers a planning service for all economics departments. It is available through the *Crosley Division, Avco Mfg. Corp., Section S.B.J., Cincinnati, Ohio.*

(For Convenience Circle Index Code 034)

► **A file size folder providing detailed information** quickly on practically every type of safety tread application is now available. It contains 28 plates of details on abrasive cast and safe groove treads as well as expansion plates, platforms, curb bars, and floor grids. This complete detailing of safety treads may be obtained free by writing *Wooster Products, Inc., Section S.B.J., Dept. S. 102, Wooster, Ohio.*

(For Convenience Circle Index Code 035)

► **A 20-page brochure describing and illustrating** the various operations in the manufacture and fabrication of stainless steel equipment for schools and other institutions is now available from the *Just Manufacturing Co., Section S.B.J., 9233 King Avenue, Franklin Park, Ill.*

(For Convenience Circle Index Code 036)

► **A folder describing electrical requirements for** high school physics and chemistry, including laboratory panels, storage batteries, motor generators and service units is available from the *Standard Electric Time Company, Section S.B.J., Springfield 2, Mass.*

(For Convenience Circle Index Code 037)

► **A catalog which illustrates and describes the** Kewanee Square-Heat Boiler for Oil, Gas or Stoker Firing, including four new larger sizes is available from *Kewanee-Ross Corporation, wanee, Ill.*

(For Convenience Circle Index Code 038)

► **An eight-page catalog which illustrates and** describes Beckley-Cardy's complete line of classroom seating is now available. This new catalog features the popular Sterling movable units and the new Streamliner series with near full page illustrations and complete specifications. Order from *Beckley-Cardy Company, Section S.B.J., 1632 Indiana Ave., Chicago 16, Ill.*

(For Convenience Circle Index Code 039)

Check List of Advertisers, New Supplies, and Equipment

To facilitate use of this index, a code number identifies the advertisements and new supplies and equipment carried in this issue. The page reference is also included. In requesting further details, subscribers may write direct to the individual companies or may use the coupon when requesting information from a number of firms.

CODE NO.		PAGE NO.
10	ADAMS & WESTLAKE CO.	21
11	AMERICAN CRAYON COMPANY	99
12	AMERICAN DESK MFG. COMPANY	14
13	AMERICAN PLAYGROUND DEVICE CO.	88
14	AMERICAN SEATING COMPANY	4
15	BECKLEY-CARDY COMPANY	73
16	BENTLEY & SIMON, INC.	101
17	BESELER COMPANY, CHAS.	85
18	BRADLEY WASHFOUNTAIN CO.	8
19	BRUNSWICK-BALKE-COLLENDER CO. HORN BROTHERS DIV.	79
110	BUTLER MANUFACTURING COMPANY	25
111	CONNSONATA	101
112	CONTINENTAL STEEL CORP.	102
113	CRANE COMPANY	27
114	CROSLEY DIV., AVCO MFG. CORP.	9
115	DRAPER SHADE COMPANY, LUTHER	90
116	ELECTRIC AIRE ENGINEERING CORP.	80
117	ENGINEERING MFG. CO.	101
118	FENESTRA BUILDING PRODUCTS CO.	2
119	FLYNN MFG. CO., MICHAEL	104
120	GRIGGS EQUIPMENT COMPANY	84
121	HERMAN NELSON UNIT VENTILATOR PRODUCTS, AMERICAN AIR FILTER CO., INC.	6 & 7
122	HEYWOOD-WAKEFIELD CO.	11
123	HILLYARD CHEMICAL COMPANY	81
124	HUNT PEN CO., C. HOWARD	74
125	HUNTINGTON LABORATORIES, INC.	75
126	INSULUX GLASS BLOCK	15
127	INTERNATIONAL BUSINESS MACHINES	17
128	KEWAUNEE MFG. COMPANY	72
129	KIMBLE GLASS COMPANY	15
130	LIBBEY-OWENS-FORD GLASS CO. (Thermopane)	23
131	LUDMAN CORPORATION	26
132	LUND EQUIPMENT COMPANY	90
133	MAPLE FLOORING MANUFACTURERS ASSN.	22
134	McARTHUR & SONS., GEO.	82
135	MILLER CO., THE	83
136	MINNEAPOLIS-HONEYWELL REGULATOR CO.	3rd cover
137	MITCHELL MFG. COMPANY	82
138	MITCHELL MODELS	93
139	MONROE COMPANY, THE	97
140	MONTGOMERY MANUFACTURING COMPANY	96
141	MURDOCK MFG. COMPANY	97
142	NATURAL SLATE BLACKBOARD CO.	76
143	NESBITT, INC., JOHN J.	4th cover
144	NORCOR MFG. COMPANY, INC.	97
145	OLD TOWN CORPORATION	10
146	PAN AMERICAN	97
147	PENNSYLVANIA SLATE PRODUCERS GUILD	74
148	PETERSON & CO.	100
149	POBLOCKI AND SONS CO.	74
150	POWERS REGULATOR CO.	28
151	PREMIER ENGRAVING COMPANY	101
152	RECREATION EQUIPMENT CO.	102
153	RODDIS PLYWOOD CORP.	16
154	ROYAL TYPEWRITER COMPANY, INC.	87
155	SCHIEBER SALES COMPANY	69
156	SEXTON & COMPANY, INC., JOHN	77
157	SINDAR CORPORATION	95
158	SLOAN VALVE COMPANY	1
159	STEPHENS-JACKSON CO.	80
160	SUPERIOR COACH CORPORATION	12 & 13
161	TAYLOR COMPANY, HALSEY W.	82
162	TRANE COMPANY	20
163	UNIVERSAL BLEACHER COMPANY	71
164	VALLEN, INC.	96
165	VESTAL INC.	86
166	VICTOR ANIMATOGRAPH CORP.	89
167	WAKEFIELD BRASS CO.	24
169	WEBER COSTELLO COMPANY	91
169	WEBER COSTELLO COMPANY	75
170	WESTINGHOUSE ELECTRIC CORP.	2nd cover
171	WOOD METAL INDUSTRIES, INC.	78

NEWS OF PRODUCTS FOR THE SCHOOLS

010	JOHNS-MANVILLE Siding	98
011	GRIGGS EQUIPMENT COMPANY Classroom seating	98
012	CRANE COMPANY Drinking fountain	98
013	SARGENT AND COMPANY Door lock	98
014	BECKLEY-CARDY COMPANY Classroom seating	98
015	BAKELITE COMPANY Window shading	98
016	CROUSE-HINDS COMPANY Floodlight	99
017	CHARLES BESELER COMPANY Projector	99
018	GLOBE AUTOMATIC SPRINKLER CO. Sprinkler	99
019	NORCOR MANUFACTURING CO. Classroom seating	100
020	AMERICAN RADIATOR & STANDARD SANITARY CORP. Kitchen cabinets	100
021	ELECTOSIG CORPORATION Electrical panels	100
022	INTERNATIONAL BUSINESS MACHINES CORP. Electric time system	100
023	BECKLEY-CARDY COMPANY Electric eraser cleaner	102
024	WAYNE IRON WORKS Gymstand catalogs	102
025	WEBER COSTELLO COMPANY Chalkboard catalog	102
026	NATIONAL TERRAZO AND MOSAIC ASSN. Catalog	102
027	DETROIT STEEL PRODUCTS COMPANY Catalog	102
028	INTERNATIONAL BUSINESS MACHINES CORP. Photo offset information	102
029	RUSSELL & ERWIN DIV., AMERICAN HARDWARE CORP. Care and Adjustment folder	102
030	THE TRANE COMPANY Catalogs	102
031	MILLER COMPANY Folder	103
032	HILLYARD CHEMICAL COMPANY Paint and varnish remover	103
033	KEWAUNEE MANUFACTURING CO. Catalog	103
034	CROSLEY DIV., AVCO MANUFACTURING CO. Economics dept. catalog	103
035	WOOSTER PRODUCTS, INC. Floor tread catalog	103
036	JUST MANUFACTURING COMPANY Catalog	103
037	STANDARD ELECTRIC TIME CO. Catalog	103
038	KEWANEE-ROSS CORPORATION Catalog	103
039	BECKLEY-CARDY COMPANY Classroom seating	103

For information on products, services, booklets, and catalogs, advertisers may simply encircle the code number identifying a product. (Clip and mail the coupon below to THE AMERICAN SCHOOL BOARD JOURNAL. Your request will receive prompt attention.)

THE AMERICAN SCHOOL BOARD JOURNAL **January, 1953**
400 North Broadway, Milwaukee 1, Wis.

Please send information offered in the advertisements we have encircled.

ADVERTISING INDEX

10	11	12	13	14	15	16	17	18	19	110	111
112	113	114	115	116	117	118	119	120	121	122	123
124	125	126	127	128	129	130	131	132	133	134	135
136	137	138	139	140	141	142	143	144	145	146	147
148	149	150	151	152	153	154	155	156	157	158	159
160	161	162	163	164	165	166	167	168	169	170	171

NEWS OF PRODUCTS FOR THE SCHOOLS

010	011	012	013	014	015	016	017	018	019	020	021
022	023	024	025	026	027	028	029	030	031	032	033
034	035	036	037	038	039						

Also information on .....

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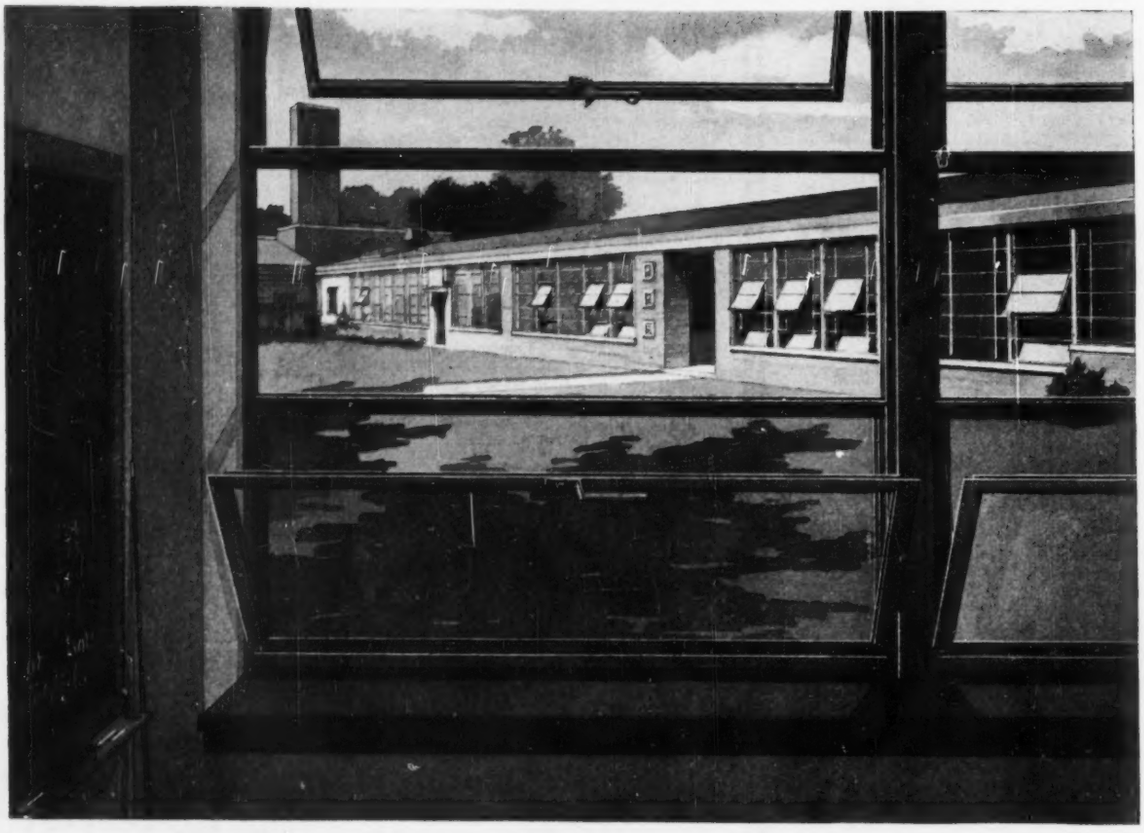


For Economy—Start with Quality

New section shown, Winchester Elementary School, New Haven, Conn., equipped with Lupton Architectural Projected Windows. Architects and Engineers: Caproni Associates, New Haven, Conn. Contractor: Fusco-Amatruda Co., New Haven, Conn.

Cramped classrooms — tight building budgets — today's educational headaches. Schools should be constructed with tomorrow in mind — built to endure. Take the matter of windows. There's more to them than frames and glass. Look for quality — check construction — make sure of value.

Illustrated above are Lupton Architectural Projected Windows — basically designed for schools. Here is quality in every sturdy inch — sound construction based on over 40 years experience in the manufacturing of metal windows — good design to assure years of trouble-free service.

There are open-in and open-out ventilators to provide ventilation in all weather. Large glass areas to "open-up" classrooms, make them lighter, brighter, pleasanter places in which to study. Here is modern appearance through simplicity of design, beauty that is timeless.

Initial cost is moderate — maintenance is low for increased savings through the years. Check your specifications. When they call for Lupton Architectural Projected Windows your architect is assuring you of value.

MICHAEL FLYNN MANUFACTURING COMPANY
700 East Godfrey Avenue, Philadelphia 24, Penna.
Member of the Metal Window Institute and Aluminum Window Manufacturers' Association

LUPTON
METAL WINDOWS

Fast, accurate performance is the mark of every Honeywell Control

SPEED and accuracy often are determining factors in grading arithmetic students, just as they are in grading control systems. This time of year, the system must exercise *fast, accurate* control of heat and fresh air, if healthful, comfortable temperatures are to be maintained in the classroom.

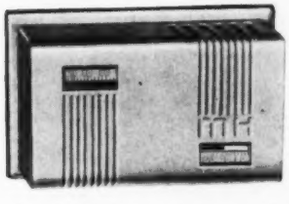
To insure better temperature control, many schools, knowing Honeywell's *great reputation for dependable performance*, insist on complete Honeywell Control Systems.

Today, in hundreds of schools, Honeywell systems are providing the level temperatures, adequate fresh air and proper humidity so essential for student alertness. And Honeywell Controls have been proven to be more accurate, more dependable!

Honeywell makes a complete line of controls, so whatever your requirements—electronic, electric or pneumatic controls for heating, ventilating, hot water, and refrigeration equipment — Honeywell can meet them.

Honeywell service is complete, too! A skilled Honeywell engineer will advise you on new installations, modernizations or help you on any maintenance needed for your present control system. Just contact one of Honeywell's 104 offices, located in key cities from coast to coast.

So, whether you're modernizing, building a new school or need service, contact Honeywell. Or, for a copy of the booklet, "Honeywell Control Systems for the Modern School," write Honeywell, Dept. AJ-1-10, Minneapolis 8, Minnesota.

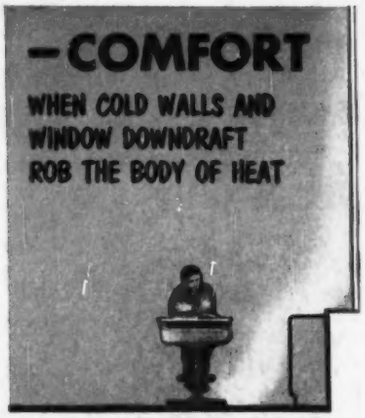


Special features give more classroom comfort!

The Honeywell Grad-U-Stat—the newest development in pneumatic thermostats—is specially designed for classroom use. In addition to its fast, *remarkable accuracy* in metering heat to the room's exact needs, this Grad-U-Stat is noiseless, dust-proof and tamper-proof—all ideal features for schools. With a Grad-U-Stat in every classroom, your students work in comfort regardless of weather changes.

MINNEAPOLIS
Honeywell

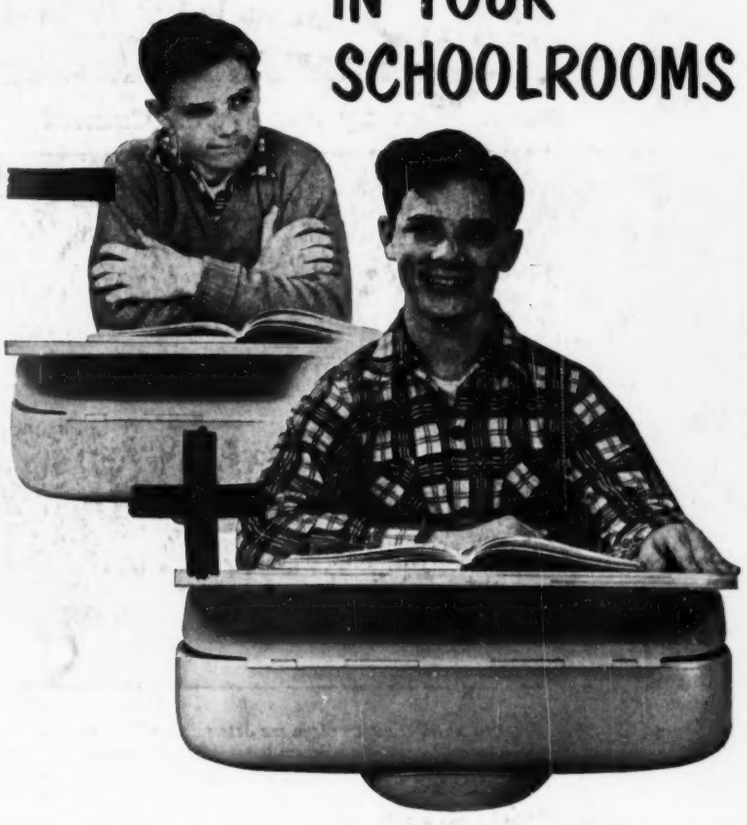
First in Controls



With room-air temperature evenly maintained, downdraft from large cold windows may remain the robber of comfort.

The Syncretizer and Wind-o-line temper downdraft, raise it out of impression range, improve thermal balance.

GET ON THE PLUS SIDE OF COMFORT IN YOUR SCHOOLROOMS



THERMAL COMFORT in the schoolroom is more than a matter of maintaining the desired uniform classroom temperature. The human body finds comfort in a narrow range of atmospheric conditions in which neither heat loss nor heat production is excessive.

The radiant temperature differential of cold walls and windows, and especially the chilling effect of a cold window downdraft can *subtract* from the comfort indicated by the thermostat.

These important facts should be kept in mind while selecting schoolhouse heating and ventilating units—a lifetime investment in comfort.

The Nesbitt Syncretizer functions in accordance with today's knowledge. After heating up the classroom to the desired temperature, the Syncretizer provides—all day long, without interruption in occupied rooms—a refreshing stream of tempered air, automatically controlled to keep the occupants within the comfort zone of thermal equilibrium.

This Nesbitt Thermal Blanket protects against the most inclement outdoor air. For, in cases where large window areas and frigid exposures will create a discomforting downdraft, Nesbitt Wind-o-line Radiation is integrated with the Syncretizer. Thus, a heat *gain* is made available where a heat *loss* is encountered—a natural law of thermostatics—and even the pupils near the windows are kept on the *plus* side of comfort.

NESBITT *Syncretizer* WITH WIND·O·LINE

MADE AND SOLD BY JOHN J. NESBITT, INC., PHILADELPHIA 36, PA. SOLD ALSO BY AMERICAN BLOWER CORPORATION